DOCUMENT RESUME

ED 454 852	IR 058 143
AUTHOR	Barrett, G. Jaia, Ed.
TITLE	A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC, 2000.
INSTITUTION	Association of Research Libraries, Washington, DC.
ISSN	ISSN-1050-6098
PUB DATE	2000-00-00
NOTE	98p.; Previous title of newsletter: "ARL: A Bimonthly Newsletter of Research Library Issues and Actions." Published bimonthly; only five issues were published in 2000. For the 1999 issues, see ED 437 979.
AVAILABLE FROM	Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036 (members $25 per year for additional subscription; nonmembers $50 per year). Tel: 202-296-2296; Fax: 202-872-0884; Web site: http://www.arl.org/newsltr/2000.html.
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	ARL; n208-213 Feb-Dec 2000
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Academic Libraries; Higher Education; Information Services; Library Associations; Library Cooperation; Library Development; Newsletters; Publishing Industry; *Research Libraries; Scholarly Communication; Scholarly Journals
IDENTIFIERS	*Association of Research Libraries

ABSTRACT

This document consists of the five issues of the bimonthly ARL (Association of Research Libraries) newsletter which cover the year 2000. Each issue includes some or all of the following sections: "Current Issues"; reports from SPARC (Scholarly Publishing and Academic Resources Coalition), Coalition for Networked Information, Office of Leadership & Management Services, and Office of Scholarly Communication; "Diversity"; "Preservation"; "Statistics and Measurement"; "Federal Relations"; "ARL Activities"; and a calendar of events. A special double issue (for February and April) focuses on human resources. "Current Issues" articles cover: principles for emerging systems of scholarly publishing; the feasibility of the ARL developing a "library.org" Web presence, or scholars portal; library catalogs, scholarly portals, and blending the features of both in libraries; and establishing a role for research libraries in learning outcomes assessment programs. (AEF)

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ED 454 852

ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC 2000

Numbers 208-213
February–December 2000

G. Jaia Barrett, Editor

Association of Research Libraries

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ARL

A BIMONTHLY REPORT ON RESEARCH LIBRARY ISSUES AND ACTIONS FROM ARL, CNI, AND SPARC

208/209 SPECIAL DOUBLE ISSUE ON HUMAN RESOURCES February/April 2000

THE CHANGING PROFILE OF RESEARCH LIBRARY PROFESSIONAL STAFF

by Stanley Wilder, Assistant Dean, University of Rochester Libraries

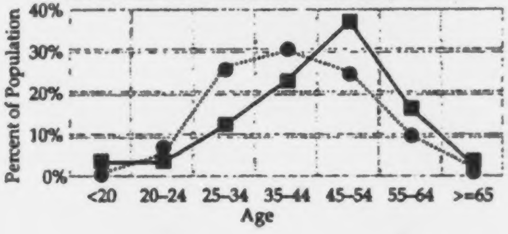
In demographic terms, librarianship in North America is a profession apart. Librarians are, as a group, substantially older than those in comparable professions, and they are aging at a much faster rate. This much you may have read in this publication in the spring of 1996, when I reported the highlights of my analysis of unpublished, demographic data sets compiled from ARL's 1990 and 1994 salary survey of librarians employed in ARL's university member libraries. The full report was published in 1995 as *The Age Demographics of Academic Librarians: A Profession Apart* (Washington: Association of Research Libraries, 1995).

ARL's collection in 1998 of comparable demographic data on 8,400 professional staff positions in 110 university member libraries[1] provides an opportunity to update the 1995 study. The additional data allow for a broader perspective from which to assess the significance of apparent changes in the population. This article describes what the 1998 data reveal about age trends in the ARL university library population, with special analyses by racial/ethnic classification and by type of position.

Age Profile of Librarians in the United States

For the sake of context, it is important to note that, as a group, librarians in the U.S. are unusually old and aging rapidly. Data from the Federal government's Current Population Survey (CPS) put the percentage of librarians age 45 or over at 45.8% in 1990, 52.8% in 1994, and 56.7% in 1998. The contrast between librarians and workers in comparable professions is significant. For example, only 37.7% of comparable professionals (the Professional Specialty occupations in the CPS data) were age 45 or over in 1998, a gap of 19 percentage points. (See Chart 1.)

CHART 1: AGE OF U.S. LIBRARIANS AND COMPARABLE PROFESSIONALS, 1998

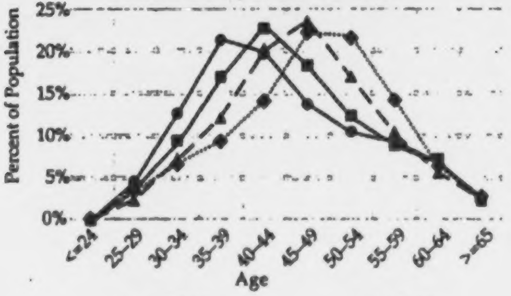


	Comparable Professionals		Librarians	
	N	%	N	%
<20	196,000	0.99	8,000	3.85
20–24	1,103,000	5.55	8,000	3.85
25–34	5,161,000	25.96	26,000	12.50
35–44	5,910,000	29.72	48,000	23.08
45–54	4,995,000	25.12	77,000	37.02
55–64	2,000,000	10.06	34,000	16.35
>=65	519,000	2.61	7,000	3.37

Source: Current Population Survey, Annual Demographic File, 1998, U.S. Department of Commerce, Bureau of the Census.

Age Profile of the ARL University Library Population

As a group, ARL university librarians are older than comparable professionals and even older than U.S. librarians in general, and they are aging quickly: in 1986, 42.4% of the ARL university library population was age 45 or over,[2] compared to 48.0% in 1990, 58.0% in 1994, and 66.1% in 1998. Chart 2 shows the shift of the age curve for professional staff in ARL university libraries over this twelve-year period. During the 1990s, CHART 2: AGE OF ARL UNIVERSITY LIBRARIANS, 1986 TO 1998

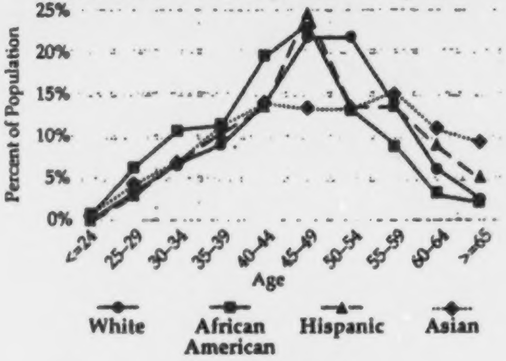


	—◆—1986 N	%	—■—1990 N	%
<=24	10	0.1	10	0
25-29	335	4.6	258	3.6
30-34	926	12.6	653	9.2
35-39	1528	20.9	1171	16.6
40-44	1422	19.4	1528	22.4
45-49	993	13.6	1263	17.9
50-54	745	10.2	841	11.9
55-59	676	9.2	618	8.7
60-64	496	6.8	477	6.7
>=65	193	2.6	197	2.8

	—▲—1994 N	%	··◆··1998 N	%
<=24	21	0.3	20	0.3
25-29	198	2.7	255	3.6
30-34	517	7.2	483	6.8
35-39	880	12.2	669	9.4
40-44	1413	19.6	990	13.9
45-49	1663	23	1529	21.5
50-54	1202	16.6	1525	21.4
55-59	719	10	991	13.9
60-64	412	5.7	456	6.4
>=65	193	2.7	209	2.9

Source: *ARL Annual Salary Survey* data, 1986, 1990, 1994, and 1998

CHART 3: AGE OF U.S. ARL UNIVERSITY LIBRARIANS BY RACE/ETHNICITY, 1998



Number of Librarians:

	White	African American	Hispanic	Asian
<=24	15	2	0	3
25-29	212	15	4	16
30-34	404	25	9	26
35-39	540	26	13	41
40-44	818	45	17	51
45-49	1270	54	31	49
50-54	1278	31	17	49
55-59	803	21	17	56
60-64	358	7	11	40
>=65	159	5	6	34
All Ages	5,857	231	125	365

Percent of Population:

	White	African American	Hispanic	Asian
<=24	0.3	0.9	0.0	0.8
25-29	3.6	6.5	3.2	4.4
30-34	6.9	10.8	7.2	7.1
35-39	9.2	11.3	10.4	11.2
40-44	14.0	19.5	13.6	14.0
45-49	21.7	23.4	24.8	13.4
50-54	21.8	13.4	13.6	13.4
55-59	13.7	9.1	13.6	15.3
60-64	6.1	3.0	8.8	11.0
>=65	2.7	2.2	4.8	9.3

Source: *ARL Annual Salary Survey* data, 1998

the age gap between the ARL university library population and the general population of U.S. librarians widened: this gap was 2.2 percentage points in 1990, compared to 5.2 percentage points in 1994, and 9.4 points in 1998.

The aging of the ARL population appears to be the result of several factors:

- The rate of hire for ARL libraries in 1998 was 25% lower than in 1990, though it has remained stable since 1994.
- In 1998, new professionals—the primary source of youth for the population—accounted for 38% of new hires in ARL libraries, but only 4% of the larger ARL population.[3]
- The age of students enrolled in ALA-accredited M.L.S. degree programs—a traditional source of new professionals hired by ARL libraries—remained high in 1998, though not as high as in 1994.
- To the degree that baby boomers dominate the general population of working people, they also dominate the pool of people available to fill vacant positions. All but the youngest baby boomers are currently age 40 or over, hence their prevalence has the effect of aging the population.

Racial and Ethnic Minority Groups in U.S. ARL University Libraries

The *ARL Annual Salary Survey* includes data relating to the race and ethnicity of only U.S. ARL university librarians.[4]

TABLE 1: STAFF REDUCTIONS IN FIVE CANADIAN ARL LIBRARIES FROM 1996 TO 1997

	Professional Staff	Support Staff
Université Laval	6%	6%
McGill University	16%	13%
McMaster University	14%	13%
Queen's University	11%	9%
University of Western Ontario	2%	18%

Source: *ARL Statistics* data, 1997

In these libraries, the age profiles of racial and ethnic minority groups differed markedly from that of the majority White population between 1990 and 1998, but not in a consistent fashion. Chart 3 summarizes the age differences of the racial and ethnic groups as of 1998.

African Americans

The population of African American librarians is significantly younger than that of White librarians. This may be, in part, a result of successful recruitment efforts, despite meager growth (3%) in the overall size of this population, since 1990. The best explanation, however, may be the hiring practices prior to the mid-1970s, when librarians age 50 or over in 1998 would most likely have entered the population. Although African American ARL university librarians in the U.S. are younger than their White counterparts, they are aging rapidly: in 1990, 37.4% were age 45 or over, compared with 51.1% in 1998.

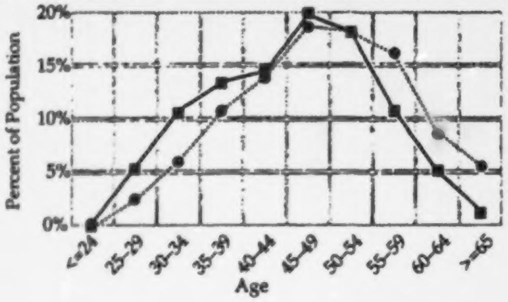
Asians

In the 1995 study, I noted that the population of Asian ARL university librarians in the U.S. was quite a bit older than the general ARL population, with almost 20% age 60 or over in 1994. This compared to only 7.8% of White ARL university librarians of similar age. Retirements through 1998 did nothing, however, to shift the age profile of Asian ARL librarians toward the younger age cohorts. While the number of Asians in U.S. ARL university libraries increased 11% between 1990 and 1998, 20% of the population remains age 60 or over. Retirements still threaten to reduce substantially the population of Asian ARL librarians in the next five years.

Hispanics

In U.S. ARL university libraries, the age profile of Hispanic librarians is similar to that of their White colleagues until the 50–54 age cohort, when the Hispanic profile drops sharply, only to rise again in the older cohorts. The unusual shape of the Hispanic curve may reflect sociological factors, and it may also reflect the small size of the population. While the number of Hispanic ARL university librarians has increased 9.4% since 1990, they accounted for only 138 of 7,672 U.S. ARL university librarians in 1998.

CHART 4: AGE OF ARL UNIVERSITY CATALOGERS AND REFERENCE LIBRARIANS, 1998



	Catalogers		Reference Librarians	
	N	%	N	%
<=24	0	0	8	0.5
25-29	21	2.7	91	5.9
30-34	46	6.0	164	10.6
35-39	82	10.7	208	13.4
40-44	106	13.8	226	14.6
45-49	142	18.5	305	19.7
50-54	138	18.0	278	18.0
55-59	122	15.9	165	10.7
60-64	68	8.9	80	5.2
>=65	43	5.6	22	1.4

Source: *ARL Annual Salary Survey* data, 1998

ARL University Library Directors

The age of the ARL directors population increased dramatically from 1990 to 1998. For example, 63% of ARL university library directors were age 50 or over in 1990, compared to 91% in 1998. More to the point, 28% of these directors were age 60 or over in 1998, which suggests that retirement alone may account for as many as 30 vacant directorships in the next five years. When one considers that directors commonly move from one ARL library to another, overall turnover among ARL directorships could be extraordinarily high in the near future.

In the 1995 study, I noted that male ARL directors were substantially older than their female counterparts and were thus likely to retire in disproportionately large numbers in the near future. While men held 63% of ARL university library directorships in 1994, women were being hired for just under half of the available director positions. The combination of disproportionate retirements and greater equity in hiring suggested that the number of female directorships would rise quickly. I did not, however, expect this change to happen as quickly as it did: between 1990 and 1998, the percentage of female ARL university library directors rose from 37% to 47%. Further, there is every reason to expect that women will soon overtake men in ARL directorships. In 1998, there were still nearly twice as many men as women in the age

TABLE 2: NEW HIRES IN ARL UNIVERSITY LIBRARIES, SELECTED JOB CATEGORIES, 1990 AND 1998

	1990		1998		% Change 1990–1998
Position	**No. of Positions**	**% New Hires**	**No. of Positions**	**% New Hires**	
Reference	286	27%	224	28%	-22%
Cataloger	183	17%	68	9%	-63%
Functional Specialist	105	10%	181	23%	72%
Subject Specialist	83	8%	62	8%	-25%
Head, Other	76	7%	50	6%	-34%
Total of All New Hires	1,062		797		-25%

Source: *ARL Annual Salary Survey* data, 1990 and 1998.

60 or over director cohort, which suggests that retirements will continue to affect men to a much greater degree than women. Equally significantly, recent hiring has favored women over men: women filled 58% of ARL university library directorships between 1994 and 1998.

Canadian ARL University Librarians

The 1995 study noted that Canadian ARL librarians were significantly older than their U.S. colleagues in 1994. Since that time, however, age proved to have far less impact on the Canadian ARL population than staff reductions. Canadian ARL university libraries lost almost 12% of their professional staffs between 1994 and 1998, most between 1996 and 1997. The main *ARL Statistics* clearly shows that this precipitous drop is the result of staff reductions at five institutions in Ontario and Quebec. (See Table 1.)

The staff reductions could have had almost any impact on the age profile of the Canadian ARL population. If early retirements had figured heavily in the reductions, for example, the population could have grown younger. Instead, the population aged dramatically. In just four years, from 1994 to 1998, the portion of the Canadian ARL university library population age 50 or over rose from 41.6% to 53.7%. Put another way, fully one-half of the current population of Canadian ARL university librarians is likely to retire within the next 15 years. Or consider that 25.8% of this population was age 55 or over in 1998, hence likely to retire within the next 10 years.

Catalogers and Reference Librarians in ARL University Libraries

Like the Canadian ARL population, catalogers in ARL university libraries were already older than the overall ARL population in 1994, and like the Canadian population, staff reductions, not age, had the greatest impact on the ARL cataloger population from 1994 to 1998. In 1998, there were 302 fewer catalogers in ARL university libraries than in 1990, despite the addition of three libraries to the data set. This constitutes a drop of 25% in just eight years. We will see below how changes in hiring patterns have contributed to this phenomenon.

Reference and cataloging have traditionally been the two most important points of entry for new professionals, hence it is instructive to compare their respective age profiles. Chart 4 illustrates a large gap in the number of young people in cataloging positions: while 30% of reference librarians in ARL university libraries were age 39 or under in 1998, only 19% of catalogers in those libraries were in that age range. At the other end of the scale, we find that 30% of catalogers were age 55 or over in 1998, and hence likely to retire in the next 10 years; this compares to only 17% of reference librarians.

New Hires and the Rise of the Functional Specialist

The decrease in the number of catalogers and that population's advancing age suggests that, in the 1990s, cataloging positions became particularly vulnerable to elimination or re-allocation to other job categories. If this is true, the shift of resources away from cataloging must be part of a larger shift in priorities among ARL libraries. Gauging the shape and direction of this shift goes beyond the scope of this work, but, by examining the population of new hires, we can supply an answer to one question related to this change: what types of positions are currently being filled in ARL libraries?

There are, in fact, important changes afoot in the ARL population of new hires. The most important of these changes concerns the growth of the job category "functional specialist" (FS). According to the instructions for the *ARL Annual Salary Survey*, functional specialists are

> *media specialists or…experts in management fields such as personnel, fiscal matters, systems, preservation, etc. Specialists may not be, strictly speaking, professional librarians (i.e., have the M.L.S.). The "specialist" category would generally not be used for someone with significant supervisory responsibilities, who should instead be listed as a department head or assistant director….*[5]

Table 2 presents the top five job categories among new hires in ARL university libraries in 1990 and 1998. The number of newly hired functional specialists jumps 72% in the period, accounting for nearly one-quarter of all hiring in 1998. The rise of the functional specialist coincides with a steep decline in the number of hires in skill

TABLE 3: SELECTED JOB CATEGORIES AS PART OF ARL UNIVERSITY LIBRARY POPULATION, 1990 AND 1998

	1990		1998		% Change 1990–1998
Position	**No. of Positions**	**% of Population**	**No. of Positions**	**% of Population**	
Reference	1719	20%	1843	22%	7%
Cataloger	1214	14%	912	11%	-25%
Functional Specialist	695	8%	1069	13%	54%
Subject Specialist	797	9%	874	10%	10%
Head, Other	735	9%	754	9%	3%

Source: *ARL Annual Salary Survey* data, 1990 and 1998.

areas traditional to librarianship, especially cataloging. The figures in Table 2 suggest a substantial shift in priorities among ARL libraries.

Who are these newly hired functional specialists?

- **Predominantly systems related:** 61% were hired for a systems-related job, whereas 11% were hired for both archival and personnel positions. The remaining FS categories each amount to less than 5%.[6]
- **Fewer library degrees:** 55% have library degrees, compared to 92% for those of other categories.
- **More males:** 44% are males, compared with 28% of other categories.
- **Substantial experience gap:** Functional specialists have an average of 4.6 years experience, compared to 7.1 for other categories.
- **Smaller salary gap:** While their average experience is only 65% that of other categories, functional specialists earn 91% of the average pay.

The shift in hiring priorities already has had an impact on the larger ARL population. Table 3 summarizes the changes among the top five job categories in ARL university libraries from 1990 to 1998.

Table 3 indicates that the number of ARL university librarians in reference, "head, other," and subject specialization positions increased between 1990 and 1998, although not as much as the number in functional specialization positions. The number of cataloger positions fell by one-quarter over the same period.[7]

One is tempted to say that the dramatic shift in hiring patterns is simply a matter of libraries taking advantage of processing efficiencies in a period in which they are stretching to support burgeoning technological needs. The truth is surely richer and more complex than that, and more work needs to be done to address the question.

Conclusion

When examined over time, the *ARL Annual Salary Survey* data give the impression of a profession in the midst of a watershed change. Retirement levels are already high, and will grow much higher in the near future, especially for catalogers, directors, Asian librarians, and Canadian librarians.[8] At the same time, ARL libraries are shifting their hiring priorities to accommodate their need for new kinds of expertise. This shift is significant to the degree that it represents a movement away from traditional library skills and library education generally. One is left with the overpowering sense that while the individuals who are about to leave this population may be replaced, their skills and professional training may not. And while we expect the skills required of academic librarians to change along with the information environment they mediate, the speed and direction of this change will present ARL libraries with a tremendous challenge for the future.

For more information on the ARL Annual Salary Survey *and a copy of the survey instrument, see <http://www.arl.org/stats/salary/>.*

[1] George Washington University became ARL's 122nd member in 1998 but their data were not included in the 1998 *Salary Survey* due to the timing of the survey.

[2] Data on the age distribution of the 1986 ARL university library population was recently located and incorporated into Chart 2.

[3] A new professional is defined here as an individual with a value of zero or one in the "Years Experience" variable of the Salary Survey; a new hire is defined as an individual with a value of zero or one in the "Years in Library" variable. (Counting only those with a value of zero would seriously under-represent new professionals and new hires. The Survey instructions state, for example, that a person with seven months of professional experience as of 1 July 1998 should have a value of one for "Years Experience.") In 1998, survey respondents reported 797 new hires, 300 of whom were new professionals.

[4] Note that the data on minority professionals is provided by only the U.S. university member libraries following the Equal Employment Opportunity Commission (EEOC) definitions; Canadian law prohibits the identification of Canadians by ethnic category.

[5] Martha Kyrillidou, Julia C. Blixrud, and Jonathan Green, comps. and eds. *ARL Annual Salary Survey, 1998–99* (Washington: Association of Research Libraries, 1999), 87.

[6] As part of the additional "demographic" categories present in the 1998 data, libraries were asked to indicate which functional specialists fall in the following categories: acquisitions, archivist, audiovisual/media, interlibrary loan, personnel, preservation, serials, staff training, systems analysis/programming.

[7] When the data set is restricted to the 98 university libraries who were ARL members throughout the data collection history (from 1980 to 2000), the changes in the number of positions are as follows: reference 4%, cataloger -24%, functional specialist 50%, subject specialist 9%, "head, other" 1%. The addition of three new libraries to the university library data set from 1990 to 1998 contributed to the change in each of the five categories shown in Table 3, and accounts for most of the increase in "head, other" positions. But additional factors are surely at work in the decrease in cataloging positions and the increase in reference and functional and subject specialist positions.

[8] The ARL age projections from the 1995 study are currently being revised and should be available later this year.

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SALARY TRENDS HIGHLIGHT INEQUITIES—OLD AND NEW

by Martha Kyrillidou, Senior Program Officer for Statistics and Measurement

The *ARL Annual Salary Survey* provides useful data for tracking trends in ARL library professionals' salaries over the last 20 years. The *Salary Survey* is the most comprehensive and thorough guide to current salaries in large U.S. and Canadian academic and research libraries, and has proven to be a valuable management and research tool for human resource professionals in these institutions.

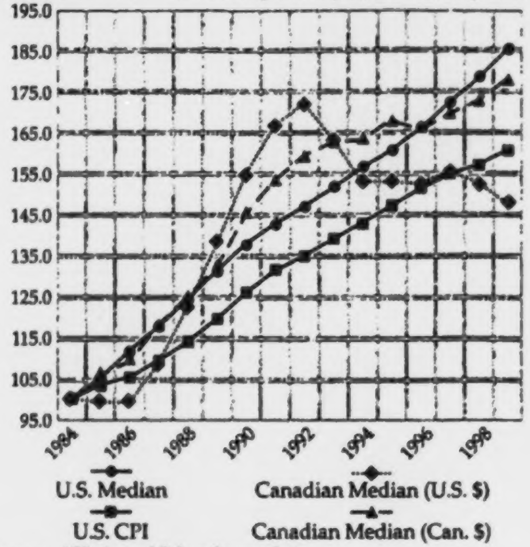
The most recent publication, *ARL Annual Salary Survey, 1999–2000* (Washington: ARL, 2000), reports salary data for 8,595 professional staff members from the 111 ARL university libraries, including law and medical libraries (814 staff members reported by 69 medical libraries and 660 staff members reported by 72 law libraries). For the 10 nonuniversity ARL libraries, data were reported for 3,737 professional staff members. A summary of the findings from this year's Salary Survey is included on page 16 in this issue of *ARL Bimonthly Report*.

This article highlights trends in university research librarian salaries by examining the data retrospectively. Salaries for ARL professional staff are examined across two dimensions—institutional and human attributes. There are a number of institutional characteristics that affect salaries differently such as geography, locus of control, size of the institution, or type of library. Human attributes, such as sex and race/ethnicity, are another set of factors that have historically been related to salaries. An informed awareness of how these issues affect salaries for professionals in ARL libraries is the first step towards understanding and improving our work environments.

ARL membership consists of both U.S. and Canadian libraries; Canadian salaries are converted to U.S. dollars for most of the tables in the *ARL Annual Salary Survey* publication. For the purpose of the longitudinal analysis presented in this article, the U.S. and Canadian data are analyzed separately, as the larger economic contexts of the two nations create interesting differences in the results.

An overarching finding of this analysis is that the purchasing power of professionals working in ARL libraries has stayed ahead of inflation. However, average salaries are increasing at a faster rate than median salaries, indicating that higher salaries are rising more quickly than lower salaries. This dynamic widens the spread between the highest and lowest salaries and consequently has a greater impact on women and minorities, who have been historically disadvantaged in earnings and are now attempting to bridge the earnings gap under adverse conditions.

CHART 1. U.S. AND CANADIAN SALARY INCREASES AND U.S. CPI, 1984/1985–1999/2000



Source: *ARL Annual Salary Survey* data

Canadian ARL University Librarians

Canadian ARL membership has been stable over the past 15 years—13 Canadian libraries have been members of ARL since 1985. McGill and Toronto were among the founding ARL members in 1932 and, in 1985, Laval was the last Canadian institution to join ARL.

Over the last decade, the Canadian economy has not fared well compared to the U.S. economy; Canadian ARL members have faced a tougher economic climate than their U.S. counterparts. The Canadian-U.S. exchange rate hit a record low of 1.5103 in 1999. The exchange rate was somewhat more favorable for Canadians in the early 1990s but, since 1992–93, it has steadily declined.

Despite the exchange rate constraints, the median Canadian ARL professional salary (in U.S. dollars) was higher than the median U.S. ARL professional salary until 1994–95. The median Canadian salary has remained lower than the median U.S. salary, declining sharply over the last three years. (See Chart 1.) Canadian librarians earn about $6,600 less than their U.S. colleagues in 1999–2000.

In the past 15 years, Canadian libraries have downsized 11% in terms of the number of librarians they employ—in the aggregate 737 staff members are employed in 1999–2000, about 100 professionals less than in 1985. Canadian professionals tend to have more years of professional library experience (about 18.9 years for women and 19.6 years for men) compared to their U.S. counterparts (16.8 for women and 16.7 years for men) and, as a group, they tend to be older (see "The Changing Profile of Research Library Professional Staff," by Stanley Wilder, on pages 1–5 of this issue). At the same time, they are less mobile, having worked on average only three years in another library as compared to five years for their U.S. counterparts.

The gender gap in salaries is almost bridged in Canadian ARL libraries—women are now making the equivalent of 99% of men's salaries. This small differential is parallel to a differential in experience, as male library professionals have, on average, slightly more years of experience than female library professionals in Canada.

Explanations for the Canadian salary trends include the weak Canadian dollar as compared to the U.S. dollar, early retirement plans, and a very low turnover rate.

U.S. ARL University Librarians

The composition of U.S. ARL member libraries has changed over the past 20 years as 10 libraries were added to the ARL membership. The change in membership composition has not significantly affected the salary data, however. Holding constant the data set of U.S. ARL libraries for the entire history of the *ARL Annual Salary Survey* data collection (88 libraries), the overall median salary is almost the same as that for the entire membership.[1] In addition, the general trend of librarians' salaries outpacing inflation still holds true.[2]

Number of U.S. ARL University Librarians Increased 15%...

Holding constant the U.S. libraries studied, we can see that the number of professionals as reported in the *ARL Annual Salary Survey* has increased about 15% over the last 15 years. However, certain regions increased faster than others in terms of the number of professionals employed—New England, the South Atlantic, and the West South Central increased by one-third—while the Pacific region was the only U.S. geographic area where the number of professionals declined.

Pacific Region Has the Highest Salaries but the Slowest Increases...

Professional salaries differ across U.S. ARL libraries due to many reasons. One obvious factor is the geographic location of the library. The highest salaries are found in the Pacific region, followed by New England and the Middle Atlantic. All three of these areas have overall average salaries higher than $50,000, with the Pacific area averaging as high as $58,605. Within the U.S., salaries in the West South Central and East South Central regions tend to be the lowest.

However, examining salary increases over a span of 15 years shows that the rate of increase has yet a different pattern across the regions of the country. Although U.S. ARL professional librarians' salaries overall have outpaced inflation, salaries in the Pacific region have increased the least over the last 15 years—primarily because during the last three years they have not kept up with salary increases in the rest of the country. Also, in the West South Central and Middle Atlantic regions, salaries have increased less than average salaries in the rest of the country. The West South Central region historically has had the lowest salary increases, especially from 1991 to 1996. The Middle Atlantic for the most part, had above-average salary increases during the last 15 years but salary growth rates were much lower for the last three years.

Mountain Region Salaries Increasing the Fastest...

On the other hand, ARL professionals' salaries in the Mountain and New England regions have increased faster than salaries in the rest of the U.S. The Mountain region experienced below-average increases until 1995 but during the last few years it reversed the trend, realizing the largest increases among all U.S. ARL professional librarians salaries in 1999–2000. The New England area has traditionally led the way in terms of salary growth, only slipping to second to the Mountain region for the first time this year.

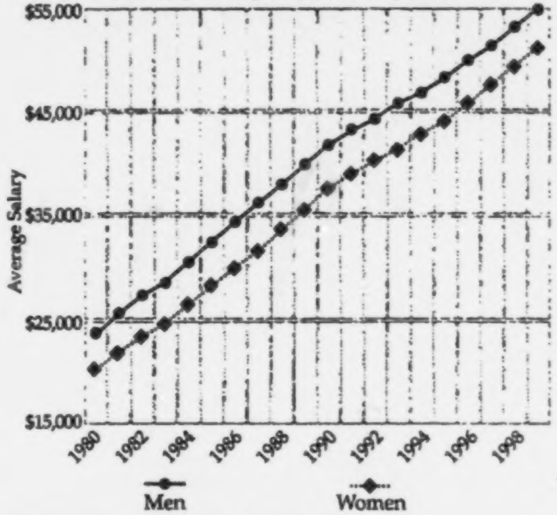
There is potential for strains developing in the East South Central and West South Central regions. These two regions have experienced large increases in the number of professionals they employ but salaries have not risen as quickly as elsewhere in the country. Coupled with the fact that these are the two regions with the lowest salaries, they might have a hard time retaining professionals.

Large Private University Libraries Pay More...

In 1980, U.S. ARL professionals earned more in public institutions than in private institutions. Salary increases, though, have been consistently higher in private institutions and, since 1988, those working in private university libraries have earned more. The gap between salaries in private and public institutions was sustained in the early 1990s when salary increases in public institutions did not keep up with those in private institutions. Although 1999–2000 salary increases were higher in public U.S. university libraries (3.98%) than those in private ones (3.04%), private universities continue to pay higher salaries.

In general, library size as measured by the number of professionals employed has a positive relationship with salary level, with larger institutions paying more, on average, than smaller institutions. A more careful examination of library size by type of institution (private vs. public) shows that the highest salaries are paid by the medium-sized and large private university libraries, whereas large state university libraries on average pay the least. Salaries in large state university

CHART 2. U.S. ARL LIBRARIANS' SALARY BY SEX, 1980/1981–1999/2000



Source: *ARL Annual Salary Survey* data

libraries have fluctuated a bit over the last 20 years but, for the most part, their salaries have been among the lowest. Salary increases in large state university libraries, though, have been greater than average during the last three years. The rate of salary increases has been the lowest among medium-sized public and private institutions.[3]

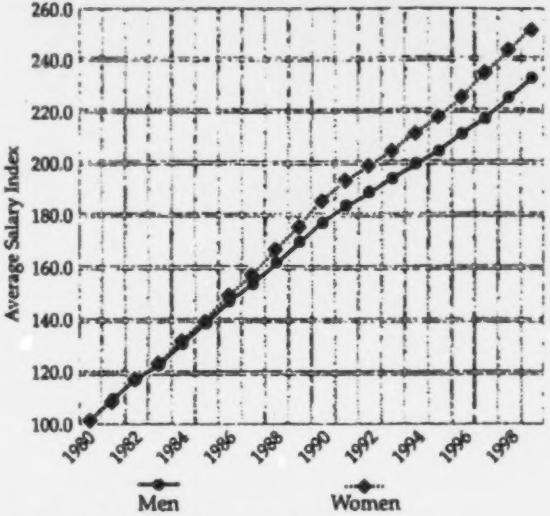
University Law Librarians Earn the Most

The ARL Annual Salary Survey collects data on three major groups of libraries—law, medical, and main libraries.[4] Law and medical librarians' salaries are collected separately, as these libraries often are administratively independent from the main library and report to the professional schools they serve. Of the three groups, law librarians have historically had the highest salaries during the last 20 years, earning an average salary of $57,494 in 1999–2000, compared to $51,927 for librarians working in the main library system and $51,501 for those working in medical libraries. The rate of salary increase has also been higher in U.S. law university libraries since 1989, thereby sustaining and enlarging their compensation advantage.

Salary Differences by Sex

Librarianship is a predominantly female profession; female professions are undervalued and underpaid. A variety of reasons have been offered as to why these trends persist, most notably the perceptions that work is peripheral in a woman's life; women are not as committed to their careers; women have less education, experience, and training; and women are less mobile.

CHART 3. U.S. ARL LIBRARIANS' SALARY INDEX BY SEX, 1980/1981–1999/2000



Source: *ARL Annual Salary Survey* data

Theories that attempt to explain sex differences in salaries can be viewed in terms of a number of dimensions: sociological vs. economic, supply-side vs. demand-side, etc. Sociological explanations tend to emphasize the importance of gender role socialization and point out that the choices individuals make are limited by their environment. As Reskin and Padavic note, "to the extent that women's and men's jobs reflect their preferences, these are preferences formed in response to the opportunities that employers provide" because "women, like men, accept the best jobs that are open to them."[5]

Economic explanations tend to emphasize that individuals act of their own free will and make rational decisions that aim at maximizing economic benefits. Economic thinking has offered two major ways of viewing and explaining differences in occupational distributions and earnings: supply-side and demand-side explanations. Supply-side economics emphasizes that different groups (women/men, race/ethnic groups, etc.) come to the labor market with different tastes and qualifications—such as education, formal training, and experience—and other productivity-related characteristics. Wage differentials and occupational segregation are viewed as the result of rational choices by the members of a group. Demand-side explanations emphasize that employers, employees, or customers may have certain preferences for members of a specific group, based either on their likes and dislikes or on correct or incorrect assumptions about the productivity of the members of the group. Thus, wage differentials are viewed as the result of the prejudices that employers, employees, and

TABLE 1. YEARS OF EXPERIENCE AND AVERAGE SALARIES FOR PROFESSIONAL MEN AND WOMEN IN ARL LIBRARIES, 1980–1999

	Women	Men	Women	Men	Women	Men
	Mean Years of Professional Experience	Mean Years of Professional Experience	Number of people	Number of people	Mean Full-time Salaries in U.S. dollars	Mean Full-time Salaries in U.S. dollars
1999	16.8	16.7	4,675	2,572	$51,012	$54,760
1998	16.7	17.0	4,610	2,524	$49,186	$52,914
1997	16.4	16.5	4,599	2,548	$47,432	$51,124
1996	16.0	16.4	4,564	2,538	$45,486	$49,702
1995	15.6	16.1	4,513	2,520	$43,926	$48,110
1994	15.4	15.9	4,500	2,515	$42,724	$46,742
1993	15.0	15.8	4,522	2,497	$41,234	$45,654
1992	14.9	15.7	4,514	2,478	$40,086	$44,204
1991	14.5	15.5	4,568	2,491	$38,879	$43,038
1990	14.1	15.2	4,657	2,541	$37,424	$41,589
1989	13.5	14.8	4,526	2,493	$35,402	$39,689
1988	13.5	15.0	4,470	2,448	$33,547	$37,774
1987	13.3	14.9	4,481	2,413	$31,527	$36,009
1986	13.1	14.7	4,318	2,397	$29,984	$34,324
1985	12.8	14.5	4,194	2,351	$28,124	$32,354
1984	12.7	14.3	4,022	2,282	$26,470	$30,514
1983	12.6	14.1	3,958	2,257	$24,664	$28,594
1982	12.4	13.9	3,918	2,249	$23,426	$27,247
1981	12.1	13.3	3,850	2,300	$21,851	$25,468
1980	11.8	12.8	3,678	2,297	$20,140	$23,467

Source: *ARL Annual Salary Survey* data.

customers may have in interacting with members of a specific group.[6]

It is clear than no single theory offers an adequate explanation—yet the gender gap persists in U.S. academic institutions in general, not only in their libraries, and there is a sense that a renewed commitment to resolve the problem is needed.[7]

The scarcity of men in the library profession has been well documented in many studies. The largest percent of men employed in ARL libraries was 38.2% in 1980–81; since then, men have consistently represented about 35% of the professional staff in ARL libraries. Yet men working as professionals in U.S. ARL university libraries enjoy a compensation advantage that is proving hard to eliminate.

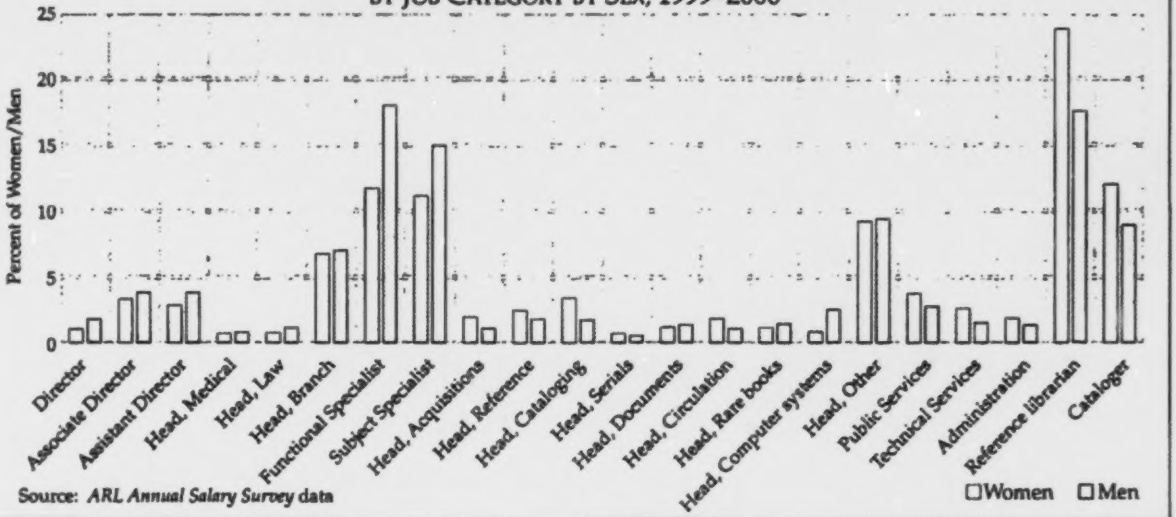
U.S. Salary Gap Closing - but Slowly

As noted previously, the salary differential between men and women in Canadian university libraries is almost bridged, with women earning 99% of men's salaries. In the U.S., the salary differential between men and women has also been closing, but very slowly—in the last 20 years it changed only seven percentage points. In 1980–81 the average salary for professional women in U.S. ARL libraries was 86% of that of their male counterparts, and in 1999–2000 it is only 93% (see Chart 2). Although the *ARL Annual Salary Survey* publications have noted that the salary gap is closing, it is apparent that, when we exclude the Canadian data, the U.S. data show smaller gains for women professionals.[8] The salary gap appears even larger in the face of the closed experience differential between men and women over the last 20 years. There is no experience differential between U.S. ARL professional men and women in 1999–2000. On average, both men and women have a little less than 17 years of professional experience, compared to 11.8 years of professional experience for women and 12.8 years for men in 1980–81 (see Table 1).

Although the rate of salary increase has been slightly higher for women than men since 1985 (see Chart 3), it has not been enough to eliminate the salary differential and achieve equity between women's and men's salaries. At the current rate it may take another 20 years or so for women professionals in U.S. ARL libraries to bridge the earnings gap.[9]

One of the reasons that has been used in the past to explain why women's salaries are lower than men's is women's lower turnover and reduced mobility; yet, the trends regarding turnover and mobility have been reversed between U.S. ARL university professional women and men, with no apparent impact on respective earnings. In 1985, the first time "years in library"

CHART 4. U.S. ARL UNIVERSITY LIBRARIANS' DISTRIBUTION BY JOB CATEGORY BY SEX, 1999–2000

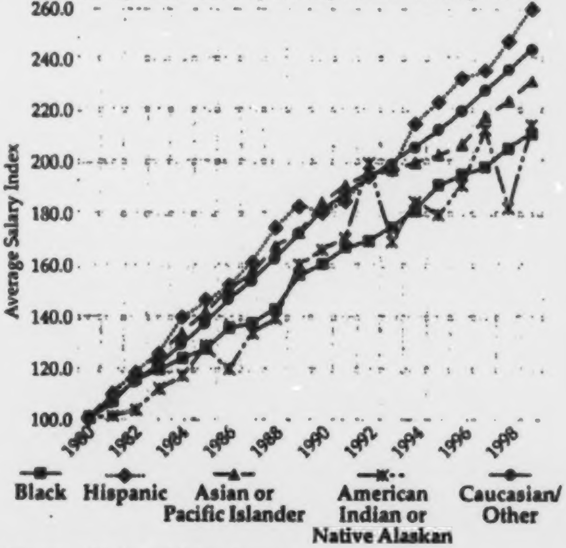


Source: *ARL Annual Salary Survey* data

information was collected on the Salary Survey, U.S. women had fewer years of experience in another library compared to men (only 3.8 years compared to 4.35 years for men). In 1998–99 women had worked slightly more than five years in another library compared to men who had worked slightly less than five years.

In ARL libraries, women continue to be underrepresented in the top positions of the organizational hierarchy although the salary differential has been bridged for men and women directors. With the exception of the director position, however, the rest of the top administrative positions continue to have more and better paid men compared to women.

CHART 5. U.S. ARL LIBRARIANS' SALARY INDEX BY RACE/ETHNICITY, 1980/1981–1999/2000



Source: *ARL Annual Salary Survey* data

Gendered Job Categories

Two positions warrant elaboration just as other articles in this special issue of the *ARL Bimonthly Report* highlight them: the functional specialist and reference librarian positions. Both of these positions pay relatively similar salaries to men and women, but functional specialists pay much higher salaries to both men and women compared to reference librarians (see Table 2).

The distribution of men and women in these job categories also points to sex segregation. A disproportionate number of men are reported in the functional specialist position (17.4% of all men are reported as functional specialists and only 11.4% of women). And a disproportionate, yet reverse, trend appears in the reference librarian position (17% of all men are reported as

TABLE 2. AVERAGE SALARIES FOR FUNCTIONAL SPECIALISTS AND REFERENCE LIBRARIANS IN ARL LIBRARIES, 1999–2000

	Women	Men
Functional Specialists	$45,983 n= 531	$46,443 n = 448
Reference Librarians	$43,150 n = 1,075	$43,563 n = 437

Source: *ARL Annual Salary Survey* data.

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Table 3. Professionals in 88 U.S. ARL University Libraries, 1999–2000, Average Data by Race/Ethnicity

	Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native	Caucasian/ Other
Years of Experience	14.21	14.48	16.72	14.31	16.93
Salary Index (1984 = 100)	211.1	260.6	231.3	213.4	244.1
Salary	$47,891	$49,722	$49,650	$48,087	$52,756
Percent Women	4.39%	2.29%	5.43%	0.17%	87.72%
Percent Men	2.88%	2.06%	3.77%	0.19%	91.10%
Number of Women	205	107	254	8	4,101
Number of Men	74	53	97	5	2,343
Salary for Women	$46,979	$49,067	$48,287	$43,786	$51,448
Salary for Men	$50,417	$51,047	$53,218	$54,970	$55,045
Years of Experience for Women	14.47	15.26	16.20	12.25	16.97
Years of Experience for Men	13.49	12.91	18.10	17.60	16.86

Source: *ARL Annual Salary Survey* data.

reference librarians compared to 23% of women). Functional specialists often tend to be those professionals with increased technological sophistication whereas reference librarians have a strong service orientation. Are we seeing a typical intra-occupational, job-level segregation trend where women and men choose and/or are assigned jobs that are sex stereotyped (see Chart 4)?[10]

Trends in Salaries for Racial/Ethnic Groups

ARL university libraries employ a small number of minority librarians compared to other academic libraries. Recent race and ethnicity data on academic libraries from the American Library Association (ALA) confirm this by showing that the sample of academic libraries surveyed by ALA has a higher representation of Blacks, Asians/Pacific Islanders, and American Indians/Alaskan Natives than ARL libraries.[11]

Salaries for Caucasian professionals in U.S. ARL university libraries have been consistently higher than those for any other race/ethnic group since the early 1990s (prior to that, Asian professionals, as a group, earned the highest salaries). Asians' salaries are slipping into the third position and Hispanic professionals' salaries are increasing rapidly—Hispanics have the second highest average salary in 1999–2000 (see Table 3). Since 1984, the rate of salary increases has been the largest for Hispanic professionals and the smallest for Black professionals (see Chart 5). As a result, Blacks had the lowest salaries during the last two years. To some extent, the low salaries for Black professionals can be explained by fewer years of experience as compared to most other ethnic/racial groups. However, Hispanic men also had fewer years of experience than most other groups, yet this did not prevent their average salary from increasing faster than the other minority groups.

Minority professionals in research libraries are distributed disproportionately around the U.S. and, in some ways, salary differentials by minority group can be explained by geographic distribution. For example, Blacks are located largely in the South, an area with lower salaries historically. Asians, on the other hand, are to be found in larger numbers in the West, where salaries traditionally have been higher than in the rest of the country. However, geographic and racial/ethnic distributions do not readily explain sex-based salary differentials.

White Women, White Men, Black Women, Black Men

The literature outside librarianship has often found pronounced differences in salaries when grouped in the categories White women, White men, Black women, and Black men, with Black women receiving the lowest salaries most of the time. U.S. ARL University librarians' salaries conform to this general observation, with Black women earning $46,979, the lowest salary of all groups, followed by Black men at $50,417, Caucasian women at $51,448 and Caucasian men at $55,045. The years of experience differential may explain some of these disparities but it does not explain the difference between salaries for Black men and women, as Black women have more experience compared to Black men.

Conclusion

Overall, North American research librarians' salaries are increasing faster than inflation, most likely due to an increased demand for technologically savvy professionals. This may not translate into gains for women and minorities, especially if the more highly paid jobs are excluding women and minorities from their ranks through under-representation in the top positions and gendered job categories. Women and minorities are trying to bridge the earnings gap in the face of a rising earnings inequality, i.e., while the earnings gap between high- and low-paying positions is getting larger.[12] These trends point to the need to define more clearly the values of the profession and how they affect the salaries of the different groups within the library workforce. The profession needs more diversity throughout its workforce, a renewed commitment to equitable salaries, and careful monitoring to ensure that the "new," more highly paid, technology-intensive jobs are open to women and minorities—a commitment to bridging the "digital divide."

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[1] For the purposes of this article, we hold constant the data set of U.S. ARL member libraries to the 88 libraries reporting data throughout the entire history of the survey data collection (1980 to present) unless otherwise noted. Readers can consult the *Annual Salary Survey* publications for data on the entire membership for each year.

[2] See Table 3 in the *ARL Annual Salary Survey, 1999–2000* (Washington: ARL, 2000).

[3] Libraries were grouped into four groups based on the number of professional staff reported for the main library system in 1999–2000. The four groups are: (a) staff over 110, (b) staff 75–110, (c) staff 50–74, (d) staff 24–49. The phrase "medium-sized libraries" refers to the two middle cohorts.

[4] The main library may include various departmental libraries in a multi-departmental library campus environment.

[5] Barbara F. Reskin and Irene Padavic, *Women and Men at Work* (Thousand Oaks, Calif.: Pine Forge Press, 1994): 78.

[6] Francine D. Blau, Marianne Ferber, and Anne E. Winkler, *The Economics of Women, Men, and Work* (Englewood Cliffs, N.J.: Prentice-Hall, 1998).

[7] Yolanda Moses, "Salaries in Academe: The Gender Gap Persists," *Chronicle of Higher Education* (12 Dec. 1997): A60.

[8] The number of libraries reporting data used in this analysis was held constant throughout the last 20 years.

[9] Professional women in Canadian ARL libraries earned 93% of their male counterparts' salaries 20 years ago—it took 20 years for these women to earn 99% of men's salary.

[10] A similar yet less pronounced trend is taking place regarding the subject specialist and cataloger positions.

[11] Mary Jo Lynch, "Librarians' Salaries Smaller Increases this Year," *American Libraries* (Nov. 1998): 68–70, <http://www.ala.org/alaorg/ors/racethnc.html>.

[12] For example, female directors' salaries were 2.7 times those of female reference librarians' salaries in 1984. Fifteen years later, the ratio has increased to 3.2. The higher salaries are rising more quickly than the lower salaries reflecting, to a small extent, the much larger earnings inequality that is taking place in the U.S. economy. For more information on the rising earnings inequality trends see James Lardner, "The Rich Get Richer: What Happens to American Society When the Gap in Wealth and Income Grows Larger?" *U.S. News and World Report* (21 Feb. 2000): 39–43. See also, Blau et al., 234–243.

EDUCATIONAL CREDENTIALS, PROFESSIONALISM, AND LIBRARIANS

by Martha Kyrillidou, ARL Senior Program Officer for Statistics and Measurement

The *ARL Annual Salary Survey* broadly defines those professional positions that are to be included in the reporting of the Salary Survey statistics—reflecting an ambiguity that often causes major debates among library professionals.[1] The ARL definition tries to be inclusive of the varying criteria that member libraries currently use for determining professional status. As a result, each library reports the salaries of those staff members it considers professionals, including, when appropriate, staff who are not librarians in a narrow definition of the term, such as computer experts, systems analysts, budget officers, etc.

A 1995 ARL OLMS SPEC Kit found inconclusive evidence as to whether ARL libraries "are moving toward the appointment of individuals who lack formal library education to librarian positions."[2] The same survey also identified a "gap between an expressed willingness to consider such individuals and actually making these appointments in any significant numbers."

The 1995 SPEC Kit on *Non-Librarian Professionals* reports the results of a survey with 95 respondents, of which 56 (59%) libraries reported that they are willing to consider applicants without the M.L.S. degree for professional positions. However, by examining 750 professional job searches that were conducted by this group of 56 libraries during 1991/92–1993/94, the SPEC Kit identified that only 36 (64%) of the 56 libraries reported having filled 110 positions (15% of the positions) with non-M.L.S. professionals.

An ARL Quick-SPEC survey sponsored by New York University Library in November 1999 and examination of educational credentials as reported in the *ARL Annual Salary Survey* every four years continue to point to a contradiction between perceived and actual hiring practices—though the contradiction has been reversed. On the one hand, the Quick-SPEC survey identified an expressed willingness to safeguard the M.L.S. as a professional degree; on the other hand, the percent of non-M.L.S. professionals reported through the *ARL Annual Salary Survey* is increasing.

In answer to the Quick-SPEC survey question of whether institutions have a strict M.L.S. requirement, 67% of the institutions (74 out of 111) responded "yes" and 33% (37) responded "no." The more recent Quick-SPEC reverses the earlier 1995 SPEC Kit findings: A larger number of libraries (74 libraries in 1999 compared with 39 libraries in 1995) report that they are willing to have a strict M.L.S. requirement in hiring library professionals.[3]

Examination of the *ARL Annual Salary Survey* historical data on educational credentials shows an increasing number of professionals reported as having no library degree. In 1985, 4% of all the professional women working in ARL university libraries did not have a library degree; by 1998 this number more than doubled to 9%. Similarly, 10% of all the professional men did not have a library degree in 1985; this number increased to 17% by 1998. Overall, professionals with no library degree tend to be men rather than women. (See Table 1.)

Since professional boundaries are socially constructed, they can change. The empirical evidence we have from the various surveys to date is contradictory. On the one hand, libraries report that they are imposing a strict requirement regarding library credentials; on the other hand, an increasing percent of non-M.L.S. professionals are coming into ARL libraries. The likelihood of a profession, namely librarianship, surviving depends to a large extent on its ability to articulate professionalism in such a way that it will meet the ever-changing needs of the library users of the future. Whether the M.L.S. requirement as a minimum professional qualification is serving libraries well in moving towards that goal seems to be in question. The need to broaden professional requirements is manifest in the work of the ALA Congress on Professional Education, which emphasizes the need to identify core values and explicit competencies for the profession.[4]

Faculty Status and Tenure

Professionals in university research libraries often compare themselves to the larger body of teaching faculty in terms of tenure and promotion. Data on faculty status and tenure for the 111 ARL university research libraries show that:

- Of the 111 ARL university libraries, 57 (51%) grant faculty status to their librarians; 42 of these 57 libraries (38% of the total) require a library degree in hiring.
- Tenure is awarded to librarians at 42 (38%) ARL institutions; 33 of these 42 libraries (30% of the total) require a library degree in hiring.
- Thirty-nine ARL libraries (35%) award both faculty status and tenure to library professionals.

Faculty Status Granted

		Yes	No	Total
Library Degree	**Yes**	42	32	74
Required	**No**	15	22	37
	Total	57	54	111

Tenure Granted

		Yes	No or Tenure Alternative	Total
Library Degree	**Yes**	33	41	74
Required	**No**	9	28	37
	Total	42	69	111

Source: ARL Quick-SPEC survey on hiring requirements, November 1999.

Table 1. ARL Professionals with No Library Degree, by Sex, 1985–1998

	Percent of Women with No Library Degree	Number of Women with No Library Degree	Total Number of Women	Percent of Men with No Library Degree	Number of Men with No Library Degree	Total Number of Men
1985	4%	152	3393	10%	192	1856
1986	6%	241	4314	12%	277	2337
1990	6%	278	4352	13%	284	2271
1994	8%	361	4695	16%	387	2491
1998	9%	392	4611	17%	409	2410

Source: *ARL Annual Salary Survey* historical data

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[1] See, for example, the New York University Library's "Open Forum on Proposal to Change Library Bylaws," 18 Oct. 1999, <http://www.nyu.edu/library/bobst/research/etc/libc.htm>.

[2] John G. Zenelis and Jean M. Dorrian, *Non-Librarian Professionals,* SPEC Kit 212 (Washington: ARL, 1995).

[3] A forthcoming SPEC Kit will analyze hiring requirements for professional librarians in more detail. The soon-to-be-published SPEC Kit 256, *Changing Roles of Professionals,* is also looking into some of these issues.

[4] Congress on Professional Education website, <http://www.ala.org/congress/>.

BACK-ROOM & FRONT-LINE CHANGES

by Julia Blixrud, Director of Information Services

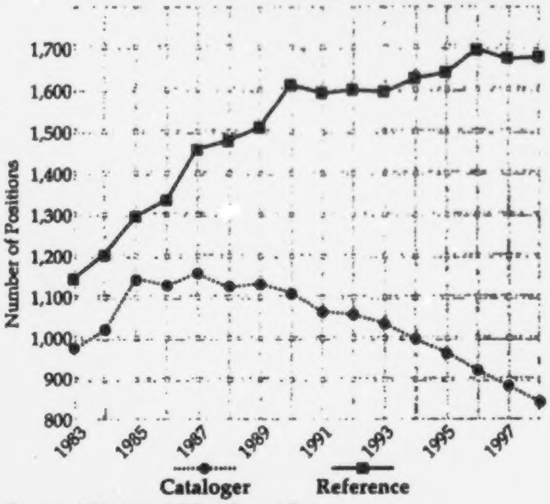
One of the most vivid examples of change in the professional staff of ARL academic libraries in the last two decades is displayed by data from the *ARL Annual Salary Survey* on the number of cataloger and reference positions in ARL libraries. (See Chart 1.) From 1983 to 1998, the number of reference positions in member libraries rose by 46%, while the number of cataloger positions fell by 13%. The addition to the ARL data set of seven new member libraries over these 15 years somewhat mutes the increase in reference positions and amplifies the decrease in cataloger positions. According to the data for this period, 1996 saw the highest number of reference positions, and cataloger positions peaked in 1987. Since 1983, there has been a strategic move towards more positions in reference and, since 1988, a steady decline in cataloging positions. Interestingly, this trend is not reflected in managerial positions for the two categories: the number of positions identified as Head of Reference rose by 26% from 131 in 1983 to 165 in 1998, while the number of Head of Cataloging positions rose by 51%—nearly twice the growth rate for Head of Reference positions—from 135 in 1983 to 204 in 1998.

ARL does not collect data on support staff and cannot document changing patterns of workload and staff responsibilities in cataloging and reference departments. However, the program titles at library conferences in the 1990s coupled with articles in the literature suggest that the roles of reference librarians and catalogers in academic libraries have changed substantially. The rise of cooperative cataloging coincided with the decrease in professional cataloging positions and increase in managerial responsibilities for bibliographic access,[1] while the rise of electronic databases, web resources, and the number of library users corresponded with the increase in reference librarian positions. *ARL Statistics* data show that, while reference transactions fluctuated throughout the 1990s, the growth of library instruction steadily increased over the last decade, both in the number of sessions and in the number of participants in those sessions. The typical ARL library in 1997–98 offered over 722 "teaching" sessions.[2]

Salary figures for cataloger and reference positions are also worth examining. In 1998, female catalogers were slightly better paid than male catalogers as well as men and women in reference positions or any of the other *ARL Annual Salary Survey* position categories, but in 1983 it was male catalogers who earned higher salaries. Other data from the *Salary Survey* show, however, that in 1998 catalogers had on average more years of experience than reference librarians, accounting for some of the pay differential between the two positions.

The gap between male and female reference librarians' salaries in ARL libraries narrowed only slightly from 1983 to 1998. In 1998, the average female reference librarian was paid $41,523, 98.3% of her male counterpart's $42,220 salary; in 1983, the average female reference librarian's salary was $22,228, 97.8% of the average male reference librarian's salary at $22,731. Notably, the gender gap in salaries for catalogers in ARL libraries has reversed itself over the same period. In 1998, the average female cataloger was paid $43,004, and the average male cataloger earned $41,744, or 97.1% of his female colleague's salary; in 1983, the average female cataloger's salary was $22,082, 95.8% of the average male's salary at $23,043.

CHART 1: REFERENCE AND CATALOGER POSITIONS IN ARL LIBRARIES, 1983–1998



Source: *ARL Annual Salary Survey* data

ARL Annual Salary Survey data indicate an increase in years of experience for female catalogers as compared to male catalogers from 1983 to 1998 that may explain some of the reversal of the pay gap between them. In 1983, the average male cataloger had six months more professional experience than his female counterpart; in 1998, the average female cataloger had almost two years more experience than her male colleague. Reference librarians, on the other hand, do not exhibit this reversal in levels of experience over this period. In fact, male reference librarians increased their lead in years of experience as compared to female reference librarians from a differential of slightly under two months in 1983 to one year in 1998. This could explain why male reference librarians continue to earn more than female reference librarians.

For those considering positions as academic research library catalogers or reference librarians in 2000, these trends can be useful indicators for making career choices.

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[1] See, for example, Lois Buttlar and Rainder Garcha, "Catalogers in Academic Libraries: Their Evolving and Expanding Roles," *College & Research Libraries* 59, no. 4 (July 1998): 311–321.

[2] Martha Kyrillidou, Jonathan Green, and Julia C. Blixrud, comps. and eds., *ARL Statistics 1997–98*, (Washington: ARL, 1999), 8.

CHANGING ROLES IN RESEARCH LIBRARIES

by Kathryn J. Deiss, OLMS Program Manager

Late in 1998, the ARL Research Library Leadership and Management Committee conducted a brief, informal survey to discover whether or not research libraries have radically defined professional positions and, if so, how many positions had been redefined or were completely new. This survey was sent to all ARL library directors and the ARL office received 52 responses out of the 122 libraries polled. The responses indicate the beginnings of a change in how professional positions in research libraries are being viewed and redefined.

Since January 1996, the 52 responding libraries posted more positions than the Committee expected: 621 professional librarian positions—an annual average of four positions per library—and 197 administrative professional positions (other than librarian)—an annual average of one and one-quarter positions per library. This "quick and dirty" survey shows that turnover in academic libraries does exist and, while we have no longitudinal data on job descriptions to confirm a trend, it is clear that positions are being redesigned to meet changing times and user needs.

Since the Committee was interested in the extent to which libraries had redesigned positions to meet evolving needs, it is interesting to note that the 52 responding libraries reported that they had radically redesigned 156 professional librarian positions and 87 administrative professional positions other than librarian. These positions were retooled for a mix of new and experienced professionals. ARL received 94 redesigned job descriptions from survey respondents, summarized in Table 1. Technology-related and user services positions each account for one-quarter of these descriptions, with collection development and technical services also composing significant portions of the redesigned job descriptions.

The survey asked respondents to describe the types of positions they would choose to fill should they have a sudden influx of financial resources. The resulting wish list, summarized in Table 2, is a mix of traditionally defined positions and newer titles primarily dealing with electronic resource services and technology in general. Collection development and user services positions rank high on this list as well.

Later this year, ARL will publish a SPEC Kit—with detailed job descriptions and case studies—on the subject of changing roles in research libraries.

TABLE 1: NEWLY REDESIGNED PROFESSIONAL POSITIONS IN RESEARCH LIBRARIES (FROM POSITION DESCRIPTIONS SENT TO ARL)

Position Category	Number of Positions Redesigned
Web-related/Technology/Systems/ Digital Projects	25
User Services	24
Collection Development	17
Technical Services	13
Preservation	6
Development	5
Administration	3
Distance Learning/Education	2
Media-related	2
TOTAL	94

TABLE 2: POSITIONS DESIRED BY RESEARCH LIBRARIES, SHOULD FUNDING BECOME AVAILABLE

Position Category		Number of Positions Desired
Technology and Networked Environment		43
Web-related positions	9	
Systems	22	
Digital Library	12	
Reference/User Services		22
Collection Development		28
Technical Services		11
Development and Public Relations		12
Administrative Support		10
Instructional Services		9
Media and Distance Education		4
Access		5
Copyright and Licenses		4
TOTAL		148

ARL LIBRARIAN SALARIES RISE FASTER THAN INFLATION

by Michael O'Connor, Statistics Research Assistant, and Martha Kyrillidou, Senior Program Officer for Statistics and Measurement

Librarian salaries at ARL member libraries are staying ahead of inflation according to the recently released *ARL Annual Salary Survey 1999–2000.* The median salary for ARL university librarians was $47,377 in 1999–2000, a 3.5% increase compared to last year's median salary of $45,775. Median salaries in ARL nonuniversity libraries increased 7% from $56,000 to $59,916. At the same time, the U.S. and Canadian Consumer Price Indexes increased 2.1% and 1.8% respectively.

Beginning professional salaries also posted significant increases. Median beginning professional salaries for ARL university librarians increased 3.7% from $30,000 in 1998–99, to $31,100 in 1999–2000. Beginning salaries for nonuniversity librarians increased 3.3%, from $29,877 to $30,849.

The Annual Report on the Economic Status of the Profession, 1999–2000, published in April by the American Association of University Professors (AAUP), states that full-time, U.S. faculty who work in doctoral institutions received increases averaging 3.9% for 1999–2000, a figure slightly higher than the average increase (3.5%) that U.S. ARL university librarians received for the same academic year.[1] University faculty salaries, however, are much higher, overall, than university librarian salaries: the average salary for a faculty member at a U.S. doctoral institution in 1999–2000 is $66,991,[2] compared to an average salary of $51,914 for U.S. ARL university librarians.

Salaries in Canadian ARL libraries increased 2.6% from last year but, due to an all-time low exchange rate, they declined 3.6% when expressed in U.S. dollars. In 1999–2000, the average salary was $53,322 for private U.S. institutions, $51,141 for public U.S. institutions, and $42,993 for Canadian institutions (U.S. dollars).

Women's salaries at all ARL institutions averaged $49,954 in 1999–2000, a 3.1% increase since last year. The average salary for men was $53,129, a 2.8% increase. The average salary for female, university library directors, however, surpassed that for male directors by 6.7%, a gain of 3.4% over last year's rate of increase. The roles are reversed for directors of university law and medical libraries: female directors of medical libraries earned 17.2% less than male directors, while female directors of law libraries earned 8.3% less than their male counterparts.

Minority librarians in the 98 U.S. university libraries number 893 and account for 11.4% of the professional staff. The average salary of minority librarians was $49,107, which is $2,807 less than the average for all U.S. ARL librarians. The average salary for female U.S. minority librarians is 91% of that for male minority librarians. Minorities are disproportionately distributed in research libraries across the country. Fewer minority professionals are working in New England and the East North Central, West North Central, East South Central, West South Central, and Mountain regions, while more are to be found in the Middle Atlantic, South Atlantic, and Pacific regions.

The U.S. ARL university libraries in the Pacific and New England regions again have the highest average salaries ($58,605 and $54,567 respectively), while those in the West South Central and East South Central regions continue to have the lowest ($45,878 and $46,080 respectively).

The *ARL Annual Salary Survey 1999–2000* is available for $39 to member libraries and $79 to nonmembers (plus $6 shipping and handling per publication), and is available on standing order. For ordering information, please contact ARL Publications at <pubs@arl.org>.

ARL ACADEMIC LIBRARIANS, FY 1999–2000

	Women	Men	Combined
Average salary (U.S. and Canadian)	$49,954	$53,129	$51,113
Average years of experience (U.S. and Canadian)	17.1	17.3	17.1
Total number of filled positions (U.S. and Canadian)	4,520	2,601	7,121
Minority librarians' average salary (U.S. only)	$47,730	$52,577	$49,107
Total number of minority librarians (U.S. only)	532	211	743
Total number of directors (U.S. and Canadian)	54	57	111

Excludes law and medical libraries.
Source: *ARL Annual Salary Survey 1999–2000.*

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[1] Denise K. Magner, "Faculty Salaries Increased 3.7% in 1999–2000," *Chronicle of Higher Education* 46, no. 32 (14 April 2000): A20, <http://chronicle.com/weekly/v46/i32/32a02001.htm>.

[2] Ibid.

CUSTOM REPORTS MEET MEMBER NEEDS

by Julia Blixrud, Director of Information Services

For several years, ARL member libraries have been taking advantage of a little-known service of the ARL Statistics and Measurement Program to generate custom data reports. These reports are compiled primarily from the *ARL Annual Salary Survey* data, but they may be produced with data from any of the ARL statistical publications. The majority of requestors use these custom reports in budget discussions for staff salary increases; other uses include supplementary budget requests, institutional self-studies, and salary negotiations for new or redefined position descriptions. The reports are usually delivered as Microsoft Word files, but data can be provided in spreadsheets as well. The costs for the reports range from $200 for a single table to $2,000–$3,000 for a more complex data analysis. Those who have repeated orders from year to year indicate that the results—in terms of budget increases—of using these reports are well worth the cost of generating them.

Are the Salaries at My Institution Competitive?

How Does My Library Compare with Its Peers?

According to Larry Kahle, Associate Dean of the University of Nebraska Library, his institution successfully used the custom report service to "increase faculty awareness of the intricacies of salary administration, generate interest [in] salary compensation issues for librarians, and achieve greater understanding by librarians and university administrators of how academic rank is used by their peer institutions."

Recent custom reports generated for ARL members include:

- salary studies for the full range of positions in a library as compared with a peer group based on geographic location, public/private status, or other criteria;
- salaries for specific positions across a set of institutions (often used before recruiting for a position new to the library to determine the market salary for that position);
- a specific table from the *ARL Annual Salary Survey* that reflects only the data for the requesting institution or a particular set of institutions;
- average percent increase in salaries among a peer group over the past three years;
- low, average, median, and maximum salaries for a single institution alone and with peer group libraries with three-, four- and five-step ranks;
- low, average, median, and maximum salaries for a single institution alone and for its peer group libraries for each year of experience;
- median and average salaries by ranks or combinations of ranks;
- combinations of salary data with *ARL Statistics* data, e.g., size of cataloging staffs in institutions with a certain expenditure level;
- special runs of customized indices excluding law and medical library data; and
- special runs of ratios reports for a single institution over a span of years or multiple institutions in a single report.

These tables may also include variations such as gender differentials; inclusion or exclusion of the requesting library; combinations of positions that meet an institution's local situation, which is not reflected in the published aggregate data; and special sortings by type and size of library.

The ability to generate these special reports is due to the time-series nature of the data of both the *ARL Annual Salary Survey* and the *ARL Statistics*, as well as the validity of the variables and the consistency by which the data has been collected over the years. ARL policy stipulates that salary information not be disclosed for fewer than four individuals, so custom salary reports adhere to this policy and must be generated by ARL staff.

Additionally, the main *ARL Statistics* data are available electronically for report generation through the interactive website at the University of Virginia <http://fisher.lib.Virginia.edu/newarl/>. For examples of uses for this website, see Kendon Stubbs, "Interactive Peer Group Comparisons through the Web," *ARL: A Bimonthly Newsletter of Research Library Issues and Actions*, no. 197 (April 1998), available at <http://www.arl.org/newsltr/197/peergroup.html>. Many institutions have downloaded the complete datafiles for all *ARL Statistics* and run specialized reports locally. However, some institutions—particularly those with complex questions or time constraints—have asked that special reports using *ARL Statistics* data be produced by ARL staff.

For further information on custom reports or to discuss compilation of a specific report, please contact Martha Kyrillidou at <martha@arl.org> or Julia Blixrud at <jblix@arl.org>.

NORTH AMERICAN DEMOGRAPHIC SHIFTS AND THE IMPLICATIONS FOR MINORITY LIBRARIAN RECRUITMENT

by DeEtta Jones, Director of Diversity Initiatives

Recruitment is one of the human resources issues that libraries seem to be struggling most with right now. Recruiting for diversity is particularly difficult given current environmental variables—a strong and vibrant economy, the surge in technology, the backlash on affirmative action, and demographic shifts. Library professionals know that diversity invigorates our learning environments, our economy, and our culture. Our diversity recruitment efforts, however, compete with factors that are often beyond our control or influence. For example, personnel librarians regularly ask, "How do we attract a talented and diverse candidate pool given the demographic profile of our location?" Even though our best energy is devoted to developing strong recruitment processes, the reality is that more than 75% of U.S. counties have a greater proportion of White residents than the national average, and more than half the counties in the U.S. are at least 90% White. Factors outside libraries' sphere of influence—such as demographics—are the largest challenge to recruiters and can mean the difference between goal attainment and shortfall.

Libraries are growing increasingly sensitive to diverse customer needs and staff representation. Many research libraries have comprehensive diversity efforts that are accentuated by targeted recruitment and retention goals. These targeted efforts are in response to drastic demographic shifts—racial and ethnic minority populations will account for nearly 90% of the total growth in the U.S. population from 1995 to 2050.[1] (The U.S. Bureau of the Census defines "minority" as the combined population of people who are Black, American Indian, Eskimo, Aleut, Asian, Pacific Islander, or of any race of Hispanic origin). This increase in the U.S. minority population represents a combination of changing fertility rates and significant immigration patterns.

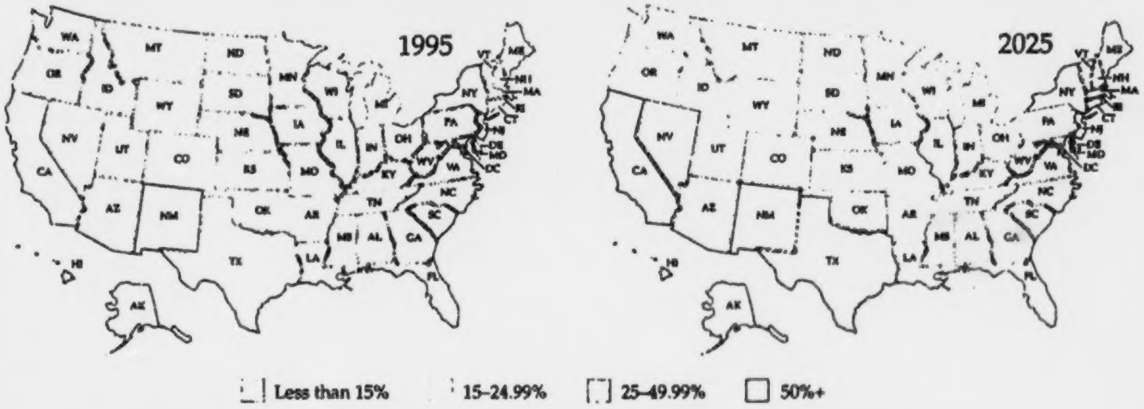
Adding another level of complexity to the North American demographic situation, the meaning of multiculturalism has become applicable at the personal level as the multiracial population grows. This individual multiculturalism is already part of the fabric of Canada's national identity and is becoming more prevalent in the U.S. Projections estimate that by 2050, people with mixed racial and ethnic ancestry will triple, to account for 21% of the U.S. population. The Bureau of the Census has created a new identification structure to more accurately reflect individual multicultural compositions, in addition to the increased minority representation, because the limitation of choosing one racial or ethnic category is becoming inaccurate for a rising number of U.S. citizens. Higher education discussions of transitioning to the Census's new data collection methods are currently underway. These new methods of identification raise questions about an institution's ability to measure success over time using variables that no longer fit traditional standards.

As the proportion of racial and ethnic minorities in the general population increases, institutions of higher education redouble their efforts to reflect this diversity on campuses. According to a 1998 American Council on Education report,[2] the number of minority students attending U.S. colleges and universities rose slightly in the fall of 1997, making up 26% of the student body. The total number of minority students increased 3.7% from 1996 to 1997, the latest year for which data is available. This data represents the third consecutive year that the enrollment of Hispanic students rose at the fastest rate, 4.5%, of all racial/ethnic groups. Over the same year, Black students' enrollment in U.S. colleges and universities increased 3%, Asian American campus presence rose 3.7%, and that of American Indians rose 3.6%. Though the number of minority students is rising, the pace at which their higher education presence is realized lags behind overall minority population growth. This disproportionate representation of minority students is an important environmental factor to recognize because it is through institutions of higher education that the library workforce is being recruited.

Regional population growth is another important factor in librarian recruitment. As the accompanying maps show, in 2025, the minority population will exceed the nonminority population in four states and the District of Columbia.[3] These four states (Hawaii, California, New Mexico, and Texas) and D.C. will represent one-fourth of the total U.S. population. In addition, the minority representation in another 21 states will be over one-quarter by 2025. Between 1995 and 2025, the number of states with less than 15% minority population will drop from 24 to 11. The Asian and Pacific Islander and Hispanic populations will double in nearly all states between 1995 and 2025. However, most of the population increase for minority groups will occur in the West or the South. This trend is important to understand when recruiting diverse staff; and many libraries have already felt the tension of trying to recruit minorities to geographic locations that are considered to have little racial and ethnic diversity.

Another critical recruitment variable, one that is particularly key for the aging library profession, is the age shift in the U.S. population. The minority youth population will more than double from 1995 to 2050, while the nonminority youth population will decline.[4] Every minority group will remain much younger than the

ACTUAL AND PROJECTED DISTRIBUTION OF THE U.S. MINORITY POPULATION, 1995 AND 2025



Source: Wan He and Frank Hobbs, *Minority Population Growth: 1995 to 2050*, The Emerging Minority Marketplace (Washington: U.S. Department of Commerce, Minority Business Development Agency, 1999).

non-Hispanic White population. In general, these age distribution differences are largely a function of higher fertility rates (such as for Hispanics and African Americans) or the impact of international migration (such as for Hispanics and Asians) relative to the nonminority groups. This data underscores the sense of urgency for institutions of higher education to attract and retain minority youth. As the minority youth population increases relative to that of nonminorities, colleges' and universities' recruitment goals become more intense and their shortfalls more pronounced. Further, the international migration pattern suggests that the number of students, potential librarians, and customers whose first language is other than English will continue to increase.[5]

The changing demographic trends of North America have challenged academic institutions and libraries to accelerate efforts to recruit minorities and create receptive organizations that capitalize on diverse qualities and attributes. For example, the library community offers several educational and career opportunities, often in the form of residency programs for new professionals.[6] The University of Minnesota Library offers a summer training program for early career professionals from underrepresented groups[7] and ARL sponsors the Leadership and Career Development Program for librarians of color who have demonstrated leadership ability in research libraries.[8] In addition, ARL recently launched its Initiative to Recruit a Diverse Workforce, a program for recruiting library and information science graduate students of color to ARL libraries upon graduation.[9] However, a closer look at the "how, when, and where" of demographic changes in the general population and in higher education suggests that success in academic libraries is most likely to be achieved slowly and unevenly throughout North America.

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[1] Wan He and Frank Hobbs, *Minority Population Growth: 1995 to 2050*, The Emerging Minority Marketplace (Washington: U.S. Department of Commerce, Minority Business Development Agency, 1999), 1. Also available at <http://www.mbda.gov/Emerging_Markets/emmkts_home.html>.

[2] Deborah J. Wilds and Reginald Wilson, *Minorities in Higher Education, 1997-98: Sixteenth Annual Status Report* (Washington: American Council on Education, 1998).

[3] He and Hobbs, *Minority Population Growth: 1995 to 2050*, 4–5.

[4] Ibid., 7.

[5] See Table 9, "Race and Hispanic Origin of the Foreign-Born Population: 1850 to 1990," in Campbell J. Gibson and Emily Lennon, "Historical Census Statistics on the Foreign-Born Population of the United States: 1850–1990," U.S. Bureau of the Census, Population Division, 26 March 1999, <http://www.census.gov/population/www/documentation/twps0029/twps0029.html>.

[6] See the ARL Research Library Residency and Internship Programs Database <http://www.arl.org/careers/residencies.html>, a web-based registry for descriptions of residency programs and internships in academic and research libraries and/or library and information science educational programs; and Julie Brewer, *Internship, Residency, and Fellowship Programs in ARL Libraries*, SPEC Kit 188 (Washington: Association of Research Libraries, 1992).

[7] See the University of Minnesota Library website at <http://www.lib.umn.edu/about/AffirmActionResad.html>.

[8] See the Leadership and Career Development Program website at <http://www.arl.org/diversity/lcdp.html>.

[9] See the Initiative's website at <http://www.arl.org/diversity/init/>.

CAREER & HR DEVELOPMENT RESOURCES ON THE ARL WEBSITE

The ARL Career Resources website <http://www.arl.org/careers/> acts as a gateway to numerous tools for research library career and human resources development. Some features of the site are highlighted below.

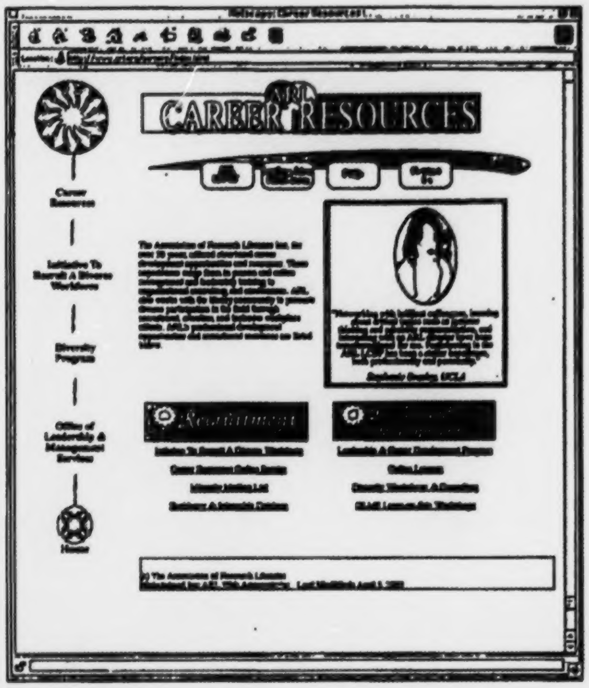
Initiative to Recruit a Diverse Workforce
The ARL Initiative to Recruit a Diverse Workforce <http://www.arl.org/diversity/init/index.html> offers a stipend of up to $5,000 to attract and expose new library professionals from underrepresented groups to careers in academic and research libraries.

Career Resources Online Service
For the job seeker and the recruiter, the site hosts the Career Resources Online Service <http://db.arl.org/careers/>, a web-based job-posting forum that is free of charge to job seekers and ARL member libraries. (For more information about this service, see page 21 of this issue of *ARL*.)

Research Library Resources & Internship Programs
The Research Library Residency & Internship Programs database <http://www.arl.org/careers/residencies.html> is a free-of-charge, web-based registry for descriptions of residency programs and internships in academic and research libraries and/or library and information science educational programs. ARL encourages institutions with residency programs and internships to submit information about their programs to the database and update that information regularly.

Leadership and Career Development Program
The ARL Leadership and Career Development (LCD) Program <http://www.arl.org/diversity/lcdp.html> is designed to increase the number of librarians from under-represented racial and ethnic groups in positions of influence and leadership in research libraries by helping them develop the skills needed to be more competitive in the promotion process. The LCD Program consists of two five-day institutes, a mentoring relationship, research project development, and a closing ceremony.

Online Lyceum
The ARL Online Lyceum <http://www.arl.org/training/lyceum.html> is a collaborative partnership between the ARL Office of Leadership and Management Services (OLMS) and Southern Illinois University Carbondale, Library Affairs. Its purpose is to provide—via distance learning—affordable and innovative professional development opportunities that actively assist academic and research libraries in recognizing, developing, optimizing, and refining staff talents and skills.



ARL Learning-on-Site Workshops
The ARL OLMS Learning-on-Site Workshops and Programs <http://www.arl.org/training/onsite.html> offer organizations the opportunity to provide high-quality, in-house training for management and staff. Using OLMS faculty—who can develop curricula on a variety of vital and current topics—capitalizes on the extensive compilation of OLMS resources that have been gained over many years of service within the library and information services environment.

ARL's Diversity Program designs educational events <http://www.arl.org/diversity/seminar.html> for library staffs covering issues such as "Building Understanding across Culture," "The Role of Assessment in Advancing Diversity for Libraries," and "Developing a Library Diversity Program." The Director of Diversity Initiatives is also available to consult with libraries on creating, implementing, and evaluating diversity initiatives.

By providing centralized access to these professional development resources, ARL hopes to foster constructive change in the recruitment, training, and development of the research library workforce.

BEST COPY AVAILABLE

THE ACADEMIC & RESEARCH LIBRARY JOB MARKET AS SEEN THROUGH THE ARL CAREER RESOURCES ONLINE SERVICE

by Kaylyn Hipps, Assistant Editor of ARL

In 1996, the Association of Research Libraries established the Career Resources Online Service <http://db.arl.org/careers/> to provide job seekers with an easy-to-use resource for finding positions in ARL libraries and to assist ARL member institutions in attracting a qualified, talented, and diverse applicant pool. In 1997, the Service began accepting position announcements from nonmember libraries, from whom a fee is collected to help sustain the Service. The Service is provided at no charge to job seekers and ARL members. The information presented in Table 1 provides a snapshot of the status of the Career Resources Online Service database at the end of 1999 and shows the types of positions ARL member libraries and nonmember libraries are seeking to fill.

Overall, at the time of this snapshot analysis of the database, the greatest number of postings were for positions in public services, area studies/subject specialty, and technical services; the least prevalent postings were for jobs in development, human resources, and library schools. Seventeen percent of all the postings were designated as entry-level, and jobs designated as both entry-level and public services were the most numerous entry-level positions advertised. The most popular categories in which non-ARL libraries posted jobs in this database are special/public/government, information technology, library schools, administration, and instruction. There are six position types that were posted only by ARL libraries: law, special collections, medical, preservation, human resources, and development.

Table 2 shows the regional distribution of the North American positions advertised in the Career Resources database. By controlling for the geographic distribution of ARL libraries, an approximation of regional differences in library job availability emerges: the southern U.S. and northeastern U.S. were over-represented in the database, the western U.S. had the same percentage of jobs as it has ARL members, and the north central U.S. and Canada were under-represented.

These observations are based on the state of the ARL Career Resources Online Service database on one day only—27 December 1999—but the position announcements advertised therein may be used to draw a general view of the current job market for academic and research librarians in North America.

TABLE 1: SNAPSHOT OF ARL CAREER RESOURCES ONLINE SERVICE DATABASE, 27 DECEMBER 1999, BY NUMBER OF POSITIONS

Position Type	Number of Positions (Total=402)*	Percent of Total Positions	Employer is ARL Member/ Nonmember
Public Services	141	35%	130/11
Area Studies/ Subject Specialist	109	27%	103/6
Technical Services	85	21%	81/4
Administration	76	19%	58/18
Entry-level	70	17%	66/4
Information Technology	64	16%	44/20
Instruction	42	10%	37/5
Collection Management	41	10%	38/3
Access & Acquisitions	32	8%	30/2
Special/Public/ Government	16	4%	2/14
Law	13	3%	13/0
Special Collections	11	3%	11/0
Medical	10	2%	10/0
Preservation	10	2%	10/0
Library Schools	8	2%	6/2
Human Resources	4	1%	4/0
Development	3	0.7%	3/0

* A single position may be assigned more than one category descriptor, e.g., a job may be described as both entry-level and public services.

TABLE 2: NUMBER OF NORTH AMERICAN POSITIONS ADVERTISED IN ARL CAREER RESOURCES ONLINE SERVICE DATABASE, 27 DECEMBER 1999, BY REGION

Region	Number of Positions	Percent of Total North American Positions	Percent of ARL Libraries in Region
Canada	4	1%	12%
Northcentral U.S.	60	15%	21%
Northeastern U.S.	115	29%	21%
Southern U.S.	158	39%	30%
Western U.S.	64	16%	16%

Thanks to Allyn Fitzgerald, ARL Marketing and Production Coordinator, for supplying the above data.

LIBRARIANS AND CROSS-SECTOR TEAMWORK

by Joan Lippincott, Associate Executive Director, Coalition for Networked Information

Working in teams is one of the current popular management techniques, and it is becoming increasingly common for academic librarians to work with others on campus to solve problems, deliver services, develop information resources, create facilities, and formulate policies. Collaborative teams of librarians and computing professionals have created campus websites, offered workshops for staff and users, planned labs and instructional technology centers, and developed joint service desks. Teams of faculty, librarians, instructional technologists and others have created network-based learning experiences incorporating electronic information resources as an integral aspect of the curriculum. Faculty, student, librarian, and technologist teams have developed publishing projects such as electronic journals, electronic dissertations, and databases. Teams of librarians, technologists, and assessment experts are working to establish measures of the use and value of technology and electronic information resources on campuses.

As the article "Changing Roles in Research Libraries" (on page 15 in this issue of *ARL*) depicts, many of the existing or desired positions in research libraries—such as web master, digital library coordinator, and electronic public access services coordinator—include some responsibilities for electronic resources. As libraries recruit for these positions, they should keep in mind that many of the individuals in such positions will find themselves involved in cross-sector collaborations due to the nature of the jobs. Candidates' capability to be successful team members and to work well with other professional groups should factor into the selection process for these positions.

A driving force in the move to teamwork is the realization that many complex projects in today's information environment require expertise that is seldom available from one individual or even one professional group. To develop an electronic publishing program, for example, faculty may contribute content, university press staff may contribute technical standards and an economic model, librarians may contribute policy and preservation expertise, and information technologists may contribute a technical infrastructure for storage and distribution; no one group would have all the skills to adequately develop a publishing program in isolation.

Another factor motivating the use of teamwork is the increasingly intertwined nature of issues and concerns among professional groups. For example, in the past, librarians generally had formal or informal oversight of issues related to copyright policy on campus. However, in the networked environment, the information technology unit could, under certain circumstances, be held legally responsible if students violate copyright law by posting entire works on their personal websites without permission. Information technologists need to work together with librarians and others on campus, such as the faculty senate, to develop institution-wide policies that take into account values and legal requirements.

Characteristics of Teamwork, Partnerships, Collaboration

Authors who write for the management literature often interchangeably use the terms "teamwork," "partnerships," and "collaboration." These terms imply particular characteristics in regard to how tasks are conducted and how people work and relate to one another in pursuing goals.

Librarians have worked with many other campus units—such as the computing center—in the past and have contributed as well as drawn expertise from these collaborations. However, generally those relationships were not genuine partnerships; rather, they were relationships where talent was hired or compensated in some way. In a genuine partnership, each sector contributes something of value to the relationship, and each partner reaps some benefits.

One of the key hallmarks of successful partnering relationships, as identified by such writers as Katzenbach and Smith, Kanter, and Henderson, is the development of a common mission as the members of a team or partners in a project work together. For example, librarians and information technologists working together to develop an instructional program for students may step back and identify as the goal of the project teaching students information seeking, organization, and management skills rather than "library" or "computing" skills. Planning a computing lab in the library can become a genuine collaborative project if librarians and information technologists develop joint goals for the project, e.g., providing an information commons where students and other users can access information resources and receive assistance on content and technical issues from available staff. In traditional library instruction programs, the librarian is frequently regarded as a guest lecturer who supplements the core course material; in a collaboratively developed curriculum that incorporates networked information resources, librarians can become true partners with faculty, sharing in the development of the underlying philosophy, pedagogy, and assessment of the course.

Developing a common mission may seem like a simple task, but it is one too frequently skipped in cross-sector projects. Often the individuals on the team focus on their parochial interests, fail to open themselves to broader points of view, and become critical of the motives and work style of their teammates from other professions. At the beginning of their work, teams should spend some concerted time on developing a joint understanding of the project and a shared vocabulary of technical terms. They need to determine working styles and parameters acceptable to all parties and communication channels that will be conducive to an exchange of ideas and plans.

Working on a team does not imply losing one's professional identity. A second hallmark of successful teams is the high value placed by team members on the varied expertise that each member brings to a project. This is a particularly important point given the occasional rancor among some professional groups and the emphasis on stereotypes or status rather than on the positive contributions that each group can make to an initiative. In successful teams, individuals often learn new skills from their partners as well as contribute a unique level of ability in some facet of the project.

Librarians and Cross-Sector Collaborative Teams: Factors for Success

Staff that are chosen or assigned to team projects involving other campus sectors may need some training in teamwork in order to succeed in their project. While individuals are generally assigned to a team project because of their particular professional or technical expertise, some social skills are also necessary to succeed, including:

- willingness to shape a common mission, outside of the unit-specific mission;
- interest in sharing jargon and definitions of technical terms;
- willingness to learn aspects of the other partners' expertise; and
- ability to appreciate differences and not criticize or stereotype others' professions.

Administrators can assist their staff in succeeding in teamwork or partnership in a number of ways. They can:

- help staff think in broader terms and set institutional rather than library-centric objectives;
- allow sufficient time for collaborative projects in the staff member's portfolio of responsibilities;
- reward collaborative activities in performance reviews and in promotion and tenure reviews; and
- create positive relationships with other units at the administrative level and minimize turf wars.

Collaborative projects can result in substantial contributions to the institution and its goals due to the in-depth nature of projects and cross-sector involvement, decreased isolation of the individual units involved, and expanded skill sets for staff. Collaborations need to be developed with an understanding of their characteristics and of the types of skills needed by staff to succeed in them.

CNI PROJECTS & CROSS-SECTOR TEAMS

Working Together

New Learning Communities

Institution-Wide Information Services

Assessing the Academic Networked Environment

University Presses in the Networked Environment

Capture and Storage of Electronic Theses and Dissertations

Information on CNI projects that have emphasized use of cross-sector teams is available on CNI's website at <http://www.cni.org/>.

RESOURCES

Some useful books and articles on collaboration, partnership, and teamwork:

Henderson, John C. "Plugging into Strategic Partnerships: The Critical IS Connection." *Sloan Management Review* 31, no. 3 (1990): 7–18.

Kanter, Rosabeth M. "Collaborative Advantage: The Art of Alliances." *Harvard Business Review* 72 (July-Aug. 1994): 96–108.

Katzenbach, Jon R., ed. *The Work of Teams.* (Boston: Harvard Business School Press, 1998.)

Katzenbach, Jon R. and Douglas K. Smith. *The Wisdom of Teams.* (New York: HarperBusiness, 1994).

MAKING SYSTEMS VISIBLE

by Michael Ray, Organizational Systems Consultant, University of Arizona Library

Editor's Note: Michael Ray was a keynote speaker at the ARL OLMS Library Human Resources Symposium held on 2–3 March 2000. Excerpts of his remarks are included here to illustrate how one institution applied systems thinking to make changes in their library organization. The examples show how systems thinking can display and help implement responses to some of the consequences of adding new and evolving position descriptions to libraries, such as those reported by Kathryn J. Deiss in her article, "Changing Roles in Research Libraries," on page 15 of this issue of ARL.

Ten years have passed since Peter Senge published the national best-seller *The Fifth Discipline.*[1] For many of us, Senge was the first writer to articulate in a meaningful way the importance of systems thinking. In his 1994 forward to a new edition of *Fifth Discipline*, Senge suggested that the radical changes propelled by growing uncertainty, global markets, and economic and political turbulence required change not just in our organizations, but in ourselves as well. He said:

> *Only by changing how we think can we change deeply embedded policies and practices. Only by changing how we interact can shared visions, shared understandings, and new capacities for coordinated action be established.*

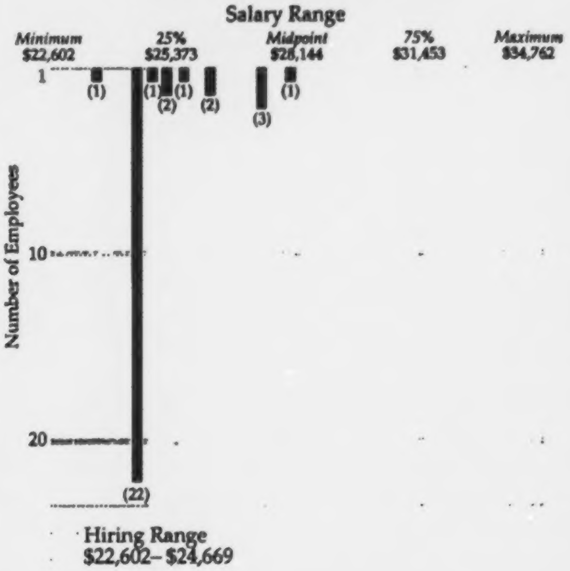
As an internal consultant to the University of Arizona (UA) Library, I am challenged by systems thinking not only to change how I think, but also how I communicate. In 1997 I was asked to help the Library design a reward system that would reinforce its team structure. This meant that I needed to convince employees throughout the Library that change was necessary, while educating them about a system about which few had any knowledge....

Making systems visible is a challenge. We need help. I use visual approaches to challenge collective habits of thinking and seeing. These approaches utilize the leverage power provided by graphic images of time and space. The Library, stressing process improvement, customer focus, and flexibility among its values, asked a great deal of its employees in terms of learning new behaviors and taking on responsibilities that once were solely required of supervisors. When proposing changes in compensation and reward policies, the affected population of employees is one of the first stakeholder groups whose support and involvement is required for success.

The Library needed clearer staff understanding of the compensation system through which their job titles and pay are determined. One key illustration of the compensation system is the pay schedule, which in our institution takes the form of a table with pay grades and ranges including minimum hire amounts, midpoints, and maximum hire amounts.

FIGURE 1. UNIVERSITY OF ARIZONA LIBRARY, SALARIES OVERVIEW FOR LIBRARY SPECIALIST, PAY GRADE 23

May 1997 – Numbers of employees and their locations in the pay range, excluding part-time positions



This is the sort of fundamental system element of which employees are often unaware. They frequently don't understand the logic behind the pay schedule. And just as often, the logic that served to design the pay system is hopelessly out of synch with the current market realities in which we find ourselves. That is true at the UA. Our schedule is essentially unchanged since 1991. It is in use by all three of the state universities in Arizona. Market adjustments in some job families are being made as money allows, but the framework itself is under increasing stress. I was curious about how our classified staff fared in their pay, and what would happen if we made it possible for them to "progress" in pay within their current grade and position. Figure 1 is one chart out of several describing all the grades and positions in use at the library.

Note that in the cases shown here we were paying our staff in the bottom quartile of the pay range. Many of the people who are represented as numbers

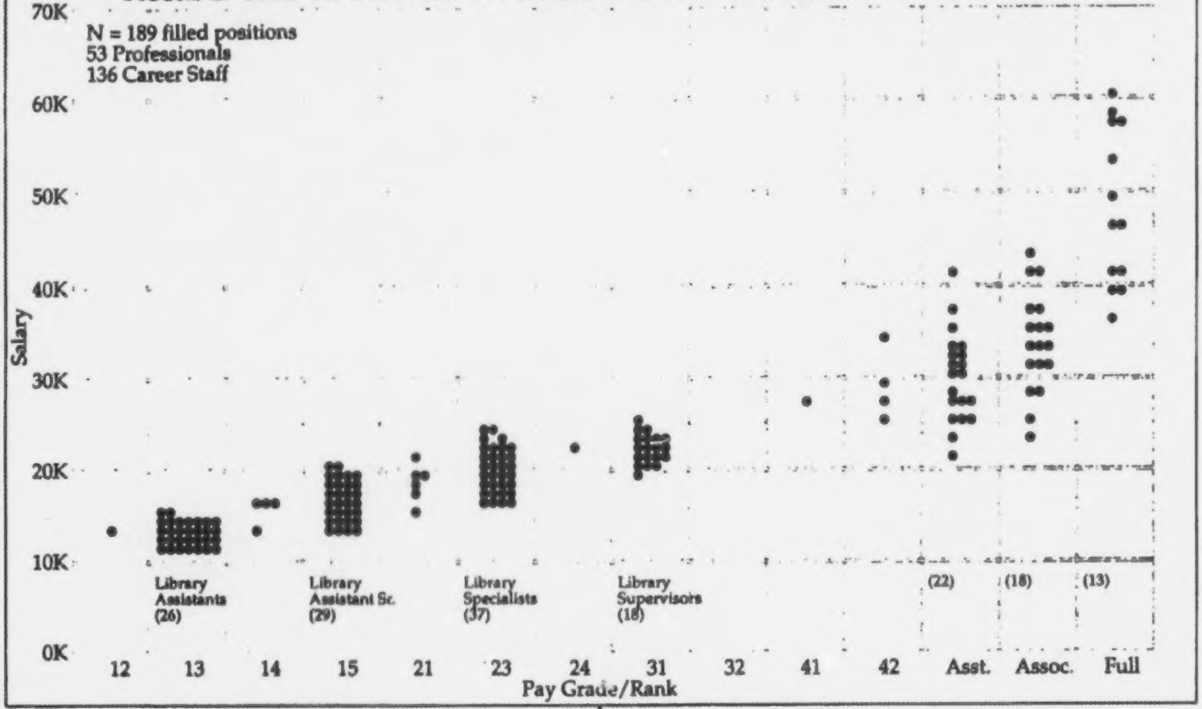


FIGURE 2. 1992–93 UNIVERSITY OF ARIZONA LIBRARY COMPENSATION ARCHITECTURE

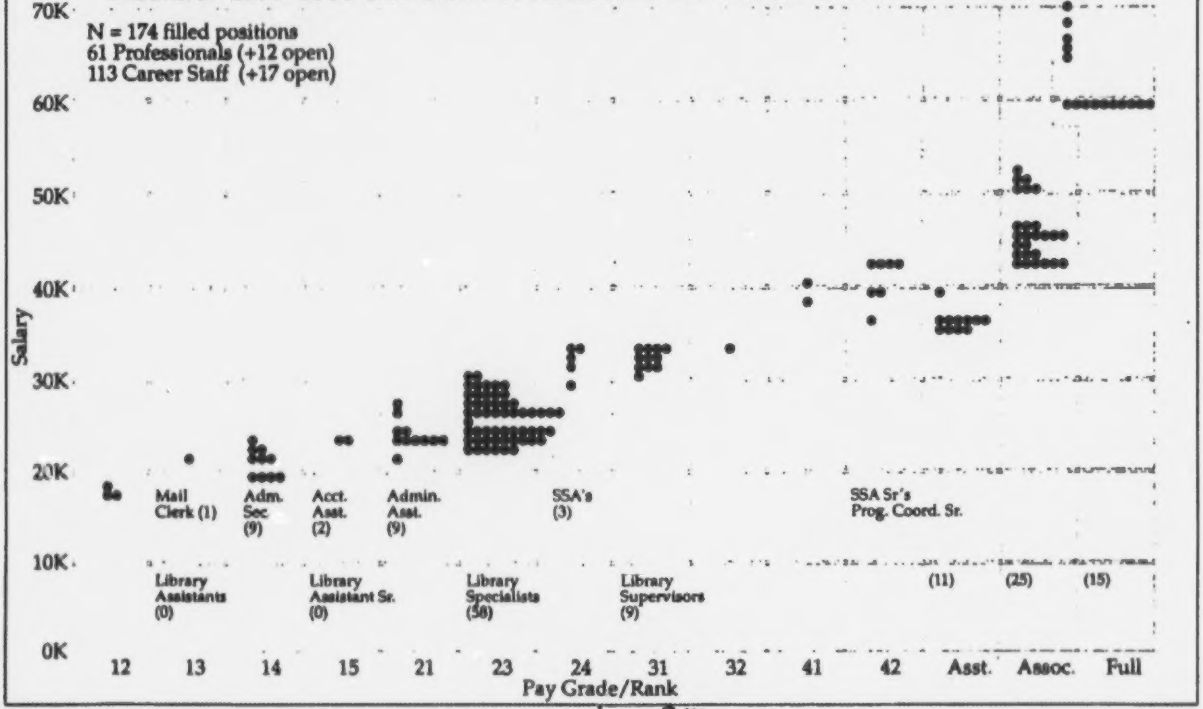


FIGURE 3. 1999–2000 UNIVERSITY OF ARIZONA LIBRARY COMPENSATION ARCHITECTURE

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on this chart worked for the library for eight, nine, ten, or more years. This graphic portrays in stark terms the realities of compression in our pay system after the economic recession of 1988–1994. Compression results when wages for those jobs filled from outside the organization are increasing faster than the wages for jobs filled via promotion or progression in pay within a person's existing job classification. In our case, new people were being brought in at salaries equal to or above those who had labored in the Library for many years.

This graphic was shown to staff to make the case for a change in policy and program. We wanted to reward staff "in-position" who learned new knowledge and skills that when successfully applied made them more flexible, more competent, and more "exemplary" in their work. Essentially, the UA Library wanted to complement a pay-for-job program (the pay schedule) with a pay-for-person program utilizing an existing "in-classification career progression" policy.

> *The bottom line of systems thinking is leverage—seeing where actions and changes in structures can lead to significant, enduring improvements.*
>
> —Peter Senge

After implementing a career progression program, I wanted to show how the system was changing over time. Given the Library's history of change going back to 1992, I thought it would be good to start at a point in time just before the changes began.... Figure 2 presents a picture of systemic change in the staffing and compensation of employees at the UA Library about 10 years ago, circa 1992. It contrasts significantly with the compensation architecture of 1999–2000 shown in Figure 3.

Note the existence in 1992 of four big groups of staff with the titles of Library Assistant, Library Assistant Sr., Library Specialist, and Library Supervisor. You can see significant overlap in pay ranges and a fairly even distribution of people in positions. Among the librarians, you can see the difference between the lowest paid assistant faculty position and the highest paid full faculty is about $40,000.

Figure 3 shows an organization with more professionals in 2000 (61) than in 1992 (53), fewer support staff in 2000 (113) than in 1992 (136), and an evolution to a current situation in which there are no Library Assistants or Assistant Seniors, 58 Library Specialists in 2000 as compared to 37 in 1992, and half as many supervisors in 2000 (9) as were in place in 1992 (18). By migrating people and positions out of the entry-level classifications and into specialist work, the UA library has accomplished an ad hoc "broadband" for these support staff titles within the larger context of a "decision-banded" compensation system (titles defined by decision-making power).

These charts exemplify how systems thinking can affect the way you do human resource work. Systems thinking continues to play a big part in the way these problems are addressed at the UA Library. As Senge notes:

> *The bottom line of systems thinking is leverage—seeing where actions and changes in structures can lead to significant, enduring improvements. Often, leverage follows the principle of economy of means: where the best results come not from large-scale efforts but from small, well-focused actions. Our nonsystemic ways of thinking are so damaging specifically because they consistently lead us to focus on low-leverage changes: we focus on symptoms where the stress is greatest. We repair or ameliorate the symptoms. But such efforts only make matters better in the short run, at best, and worse in the long run.*

We need to recognize that our professional roles, and the systemic forces that are changing them, propel us toward the necessity to keep many relationships in mind as we do our specialized work. If we can master the complexity of such relationships, our effectiveness will be enhanced. In these cases most of the data was already available. I had to find graphic ways to display the data to demonstrate for library employees the larger systems in which they function. My own experience is that people respond favorably to visually explained information about such relationships, and make better decisions as a result.

---

[1] Peter M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York: Doubleday/Currency, 1990).

PRO-ACTION FOR CHANGE IN RESEARCH LIBRARIES

by Kathryn J. Deiss, OLMS Program Manager, and DeEtta Jones, Director of Diversity Initiatives

The profession of librarianship and libraries themselves are on an evolutionary path, the future destination of which is not wholly clear. While academic libraries have changed significantly in recent years, we librarians are continuously questioning what further changes we need to make to best support research and higher education.

We accomplish our goals with our most important—and often our most costly—asset: people. This special issue of the *ARL Bimonthly Report* plots where research libraries are on their evolutionary path in terms of the changing demographics of the research library workforce; institutional actions, attitudes, and thinking about what we require of people working in research libraries; and how we deploy and reward those individuals.

Defining where we are now in terms of how we utilize our human resources is useful. By depicting the current situation, we can more vividly see both how far we have come and how far we have yet to go to meet our ideals. Much of what we can document about the use of human resources in research libraries comes from data collected annually by ARL. The longitudinal analyses of that data conducted and reported by Martha Kyrillidou, ARL, and Stanley Wilder, University of Rochester, provide an extraordinarily useful perspective from which we can better frame actions to lead libraries to a desired future.

The shaping of the future workforce—and the choices of strategic activities that this workforce will pursue—are important issues for all library staff, administrators, leaders, and human resource professionals to engage. All of the articles in this issue of *ARL* demonstrate the value of gaining a clear understanding of the impact that multiple changes have on the research library workforce. An understanding of these trends and an awareness of how they may evolve in the future are important tools for assessing and sharpening institutional and professional strategies for library recruitment, human resource deployment, and training.

In addition, however, to grasp more fully the implications of the complex changes occurring in the library workforce, we need to learn better how to apply "systems thinking," such as is described in the article by the University of Arizona's Michael Ray and manifested in the teamwork discussed in the article by Joan Lippincott of the Coalition for Networked Information. That is, we need to learn better how to view the entire enterprise of human resource management in the library as a single system—a system of interdependent parts that are considered together rather than as separate issues, functions, activities, and roles.

Jennifer James describes the skills necessary for "thinking in the future tense": perspective, pattern recognition, cultural knowledge (understanding the myths that undergird our daily lives in the workplace and society), flexibility, vision, energy, intelligence, and global values.[1] Research libraries strive to be flexible and innovative, while maintaining a sense of vision. A central question is, to use James's term, how can we avoid becoming "self-sealing cultures"—alone in the middle, but not in the heart, of the campus? We must learn the skills necessary to observe patterns in our organizations and in the profession. Without these skills we will not be able to view the whole as an interdependent system.

In a time when research libraries are responding to technological change, making difficult choices about resource reallocations, and accelerating recruitment, important efforts are also being made to change patterns that are no longer serving our institutional and professional missions. The library profession is pouring human and financial resources into programs that promote diverse representation and create learning communities. In supporting such change, ARL libraries are exhibiting what organizational culture authority Edgar Schein describes as the three key elements of successful change agents: "credibility, clarity of vision, and the ability to articulate the vision."[2] It is the exercise of these qualities that will allow libraries to proactively transform the ways in which they recruit, deploy, and train their workforces to anticipate and meet the needs of current and future library users.

[1] Jennifer James, *Thinking in the Future Tense* (New York: Touchstone, 1997).

[2] Edgar Schein, *The Corporate Culture Survival Guide* (San Francisco: Jossey-Bass, 1999).

RECRUITING? JOB HUNTING? LOOKING FOR PROFESSIONAL DEVELOPMENT OPPORTUNITIES?

Visit the newly redesigned ARL Career Resources website <http://www.arl.org/careers/>, featured in the article on page 20 of this issue of *ARL*.

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SPECIAL DOUBLE ISSUE ON HUMAN RESOURCES
February/April 2000

ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036.
202-296-2296 FAX 202-872-0884
<http://www.arl.org/newsltr/>
Copyright: © 2000 by the Association of Research Libraries

Executive Director: Duane E. Webster
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Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year.

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PRINCIPLES FOR EMERGING SYSTEMS OF SCHOLARLY PUBLISHING

by Mary M. Case, Director, Office of Scholarly Communication

The following set of principles was agreed to by the undersigned individuals as a result of a meeting held in Tempe, Arizona, on 2–4 March 2000. Sponsored by the Association of American Universities, the Association of Research Libraries, and the Merrill Advanced Studies Center of the University of Kansas, the meeting was held to facilitate discussion among the various academic stakeholders in the scholarly publishing process and to build consensus on a set of principles that could guide the transformation of the scholarly publishing system.

The creation, dissemination, and application of new knowledge are fundamental to the development of an informed citizenry and a healthy global economy. Institutions of higher education exist to fulfill these functions. From the lab to the classroom to industry to the public, the advancement of knowledge through research and teaching is an invaluable contribution made by higher education to the public good. Scholarly publishing is the process through which newly discovered knowledge is refined, certified, distributed to, and preserved for researchers, professors, students, and the public.

The current system of scholarly publishing has become too costly for the academic community to sustain. The increasing volume and costs of scholarly publications, particularly in science, technology, and medicine (STM), are making it impossible for libraries and their institutions to support the collection needs of their current and future faculty and students. Moreover, the pressure on library budgets from STM journal prices has contributed to the difficulty of academic publishers in the humanities and social sciences, primarily scholarly societies and university presses, to publish specialized monograph-length work or to find the funds to invest in the migration to digital publishing systems. Numerous studies, conferences, and roundtable discussions over the past decade have analyzed the underlying causes and recommended solutions to the scholarly publishing crisis. Many new publishing models have emerged. A lack of consensus and concerted action by the academic community, however, continues to allow the escalation of prices and volume.

The participants in the Tempe conference came together with the hope of building consensus on a set of principles that would inform the design and evaluation of new systems of scholarly publishing. The goal was to provide guidance while leaving open to creativity and market forces the actual development of such systems. The following set of principles is the result of their discussions. While the principles and their explanations reflect a North American perspective, the participants recognize that the advancement of knowledge and scholarly publishing are international enterprises. While the academic community in North America may agree on collective action, international discussion and support will be needed for the success of any new systems.

The participants encourage broad discussion and endorsement of these principles by institutions of higher education, scholars, scholarly societies, and scholarly publishers. Endorsement carries with it the commitment to implement local actions that will bring institutions of higher education closer to the goal of providing access to all relevant published research across all disciplines to all faculty by way of systems that ensure dependable management and affordable access to information over time.

OFFICE OF SCHOLARLY COMMUNICATION

Mary M. Case, Director

1. ***The cost to the academy of published research should be contained so that access to relevant research publications for faculty and students can be maintained and even expanded. Members of the university community should collaborate to develop strategies that further this end. Faculty participation is essential to the success of this process.***

With the creation, dissemination, and application of new knowledge central to their mission, institutions of higher education must work to create systems that will provide affordable access to all relevant published scholarship across all disciplines for researchers, teachers, and the broader public. To do this, faculty, university administrators, and professional societies must work together to create the systems that will contain, and in some cases, reduce substantially the costs of scholarly publishing. Since every faculty member should have access to all the relevant published research in her/his area, it is imperative that we find ways to bring down the cost to accommodate the expanding volume of publication within available budgets. The business arrangements of the journals for which faculty write, edit, and review must become a major focus of contributors, editors, and readers if scholarly publication is to become affordable again.

Containing costs might be accomplished over time within the current configuration of scholarly communication through the effective use of technology to streamline publishing functions, while increasing access and value. Such systems have been developed within the not-for-profit community by Stanford University's HighWire Press and The Johns Hopkins University's Project Muse; other efforts, such as BioOne, are being facilitated by SPARC, the Scholarly Publishing and Academic Resources Coalition. One could also envision systems that would build peer-review and abstracting and indexing functions on discipline- or institution-based e-print services. Such a system is being promoted by the Open Archives initiative, an effort that strives for compatibility among e-print services. Cost-containment should also continue through library consortial purchasing of electronic resources, a strategy that appears to be effective in lowering the unit costs of electronic information. Whatever the solution(s), cost must be made to fit within available budgets or the system will fail to provide the information to scholars that they need.

2. ***Electronic capabilities should be used, among other things, to: provide wide access to scholarship, encourage interdisciplinary research, and enhance interoperability and searchability. Development of common standards will be particularly important in the electronic environment.***

With the growing volume of scholarly research, it is increasingly difficult to uncover all of the relevant material published on a given subject. As more scholarship becomes available in digital form, this problem can be surmounted through powerful search systems provided that commercial, technical, and legal constraints do not prohibit such searches. Searching, navigation, and linking across titles and across disciplines is essential since many disciplines have multiple titles that serve them and many problems have multidisciplinary aspects that may lead a researcher to publications in fields as diverse as microbiology, law, economics, and internal medicine. The development of standards is critical to the implementation of cross-field searching and navigation. In addition, given the importance of older literature to the advancement of new knowledge, retrospective works should be digitized and made accessible online.

3. ***Scholarly publications must be archived in a secure manner so as to remain permanently available and, in the case of electronic works, a permanent identifier for citation and linking should be provided.***

The advancement of knowledge is dependent on access to prior scholarship. While research libraries, with significant support from the National Endowment for the Humanities, have made significant progress in preserving print publications, there is still a large proportion of unique printed material yet to be treated and a number of additional formats, such as videotapes, sound recordings, and film, whose preservation needs have yet to be addressed in any significant way. Electronic publishing adds yet another set of complex issues to the archiving and preservation of scholarly works. With libraries no longer owning copies and with the fragility of the electronic media, questions of what should be archived by whom and how are critical issues that need to be addressed. Despite many unanswered questions and unknown costs, archiving and preserving scholarly publications in all media are critical to any credible system of scholarly publication.

4. ***The system of scholarly publication must continue to include processes for evaluating the quality of scholarly work and every publication should provide the reader with information about evaluation the work has undergone.***

The academic community relies on the judgment of peers when assessing the quality of faculty work. While core archival journals are expected to preserve the peer-review process, the scholarly community recognizes that the exact nature and methodology of quality assessment varies by discipline. Any evolving system of scholarly publication should allow for an evaluation process to take place as appropriate and should provide a transparent mechanism that informs the reader—an expert, a student, the public—of the nature of the evaluation the work has undergone in its various versions. This recommendation recognizes the development of discipline- or institution-based collections of articles which may go through different stages of review and where neither the hierarchy of existing journals nor the reputation of the publisher may exist as a signature of quality assessment.

5. ***The academic community embraces the concepts of copyright and fair use and seeks a balance in the interest of owners and users in the digital environment. Universities, colleges, and especially their faculties should manage copyright and its limitations and exceptions in a manner that assures the faculty access to and use of their own published works in their research and teaching.***

The role of copyright is central to the academic community's mission of advancing knowledge. Members of the community are both creators and consumers of scholarly publications. As creators, faculty depend on copyright to protect the integrity of their work and on fair use to be able to use and incorporate the works of others with attribution in their own work. By tradition, faculty have transferred without direct compensation all of their copyrights to journal publishers in return for the wide distribution of their work. In some cases this tradition has resulted in the need for faculty to seek permission and pay a fee to use their own work in their research and teaching. If the academic community is to achieve its mission of advancing knowledge, it is critical that faculty authors retain the rights to use their own works in their teaching and in subsequent publications. Widespread adoption of university policies requiring faculty to retain such rights could provide individual faculty with the bargaining power to negotiate such agreements with publishers.

While this document concentrates on copyright and fair use of scholarly works, the importance of copyright and fair use go well beyond the scholarly publishing system. It is imperative that the academic community monitor and critically examine any new license arrangements or proposed legislation (whether it be copyright amendments or any body of law affecting intellectual property directly or indirectly) and take appropriate action to make sure that such arrangements or legislation do not upset the balance between owners' rights and users' exceptions to them that has been achieved in copyright law with its provisions for fair use and library and educational exemptions.

6. ***In negotiating publishing agreements, faculty should assign the rights to their work in a manner that promotes the ready use of their work and choose journals that support the goal of making scholarly publications available at reasonable cost.***

By judiciously assigning the rights to their work, faculty members can help assure that scholarship remains affordably available to the community. In the publication process, faculty can choose to publish in journals whose access and pricing policies make their work easily and affordably available. All faculty members should know the cost of journals to libraries and should consider refraining from submitting their work and assigning copyright to expensive journals when high-quality, inexpensive, publication outlets are available. In fields where alternatives do not exist, universities and scholarly societies should work with faculty to develop such outlets.

7. ***The time from submission to publication should be reduced in a manner consistent with the requirements for quality control.***

In rapidly evolving fields, lags of 12 months or more mean that scholarly history rather than cutting-edge research is the subject of publication. If published scholarship is to be a useful building block, it is imperative that the lag between submission and publication be shortened as much as possible for each field. While a number of factors contribute to the lag—peer review, author's changes, back and forth with editors—and are important to the quality of the final work, technology should be exploited to speed up the process where possible. For example, some journals have already designed systems that select reviewers based on workload and availability. In addition, a number of disciplines depend on e-print systems for quick distribution of their work.

8. ***To assure quality and reduce proliferation of publications, the evaluation of faculty should place a greater emphasis on quality of publications and a reduced emphasis on quantity.***

While a fundamental factor contributing to the rapid increase in the volume of published research is the rapid expansion of knowledge, the academic credentialing system encourages faculty to publish some work that may add little to the body of knowledge. In the spirit of creating an environment that reduces emphasis on quantity across the system and frees faculty time for more valuable endeavors, faculty in research institutions should base their evaluation of colleagues on the quality of and contribution made by a small, fixed number of published works, allowing the review to emphasize quality. This de-emphasis of quantitative measures could moderate the rate of increase in new titles and numbers of articles published. Some universities have already modified faculty evaluation in this manner and federal granting agencies, such as the National Institutes of Health, have implemented policies to limit the number of articles cited in the grant application process.

9. ***In electronic as well as print environments, scholars and students should be assured privacy with regard to their use of materials.***

The digital environment, in particular, makes it very easy to obtain data on users and use patterns, information that can have great marketing appeal. It is incumbent on the academic community to assure the privacy of individual users with regard to their use of scholarly publications or other source materials made available through our institutions, consistent with state and federal laws.

Signatories to Principles for Emerging Systems of Scholarly Publishing

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Frederick Friend, Director Scholarly Communication,
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Peter Givler, Executive Director,
Association of American University Presses

Wyatt R. Hume, Executive Vice Chancellor,
University of California, Los Angeles

Joanne Jessen, Director of Publications,
American Speech-Language-Hearing Association

Richard Johnson, Enterprise Director,
SPARC

Arnita Jones, Executive Director,
American Historical Association

Clifford Lynch, Executive Director,
Coalition for Networked Information

James V. Maher, Provost and Senior Vice Chancellor,
University of Pittsburgh

Peggy S. Meszaros, Senior Vice President and Provost,
Virginia Tech University

Rush G. Miller, University Librarian and Director,
University Library System,
University of Pittsburgh

James G. Neal, Dean of University Libraries,
Johns Hopkins University

Charles E. Phelps, Provost,
University of Rochester

Bernard Rous, Deputy Director of Publications,
Association for Computing Machinery

Keith Russell, Dean of Libraries,
University of Kansas

David Shulenburger, Provost,
University of Kansas

Carla Stoffle, Dean of Libraries,
University of Arizona

Suzanne Thorin, Dean of University Libraries,
Indiana University

Herbert Van de Sompel, Head of Library Automation,
Ghent University

John Vaughn, Executive Vice President,
Association of American Universities

Marlie Wasserman, Director,
Rutgers University Press

Duane Webster, Executive Director,
Association of Research Libraries

The AAU Committee on Intellectual Property, at its meeting on 18 April 2000, reviewed the Principles and commended them to the AAU presidents and chancellors for discussion on their campuses. At its meeting on 19 May 2000, the ARL Board endorsed the Principles and encouraged members to distribute them widely and engage faculty and administrators in their discussion. The AAU and ARL are publicizing the Principles and commend them for discussion by scholarly societies and institutions of higher education. The Principles can be found online at <http://www.arl.org/scomm/tempe.html>.

THE ECONOMICS AND USAGE OF DIGITAL LIBRARY COLLECTIONS

by Kate Thomes, Head, Bevier Engineering Library, University of Pittsburgh

The conference on "The Economics and Usage of Digital Library Collections," held in Ann Arbor, Michigan, 23–24 March 2000, and sponsored by the Program for Research on the Information Economy and the University Library at the University of Michigan, provided an opportunity for an international group of librarians, publishers, and economists to speak on the economics and usage of digital collections. The conference also marked the conclusion of the PEAK project, a four-year study of digital collection pricing models and user behavior sponsored by the University of Michigan. The PEAK report was one of 16 presentations on a variety of research studies and practical applications of pricing and distribution models, economic analyses, user behavior studies, and the impact of digital libraries on traditional library operations. The full text of most of the papers presented is available, along with more information about the speakers and projects, from the conference website at <http://www.si.umich.edu/PEAK-2000/>. This article summarizes the main themes that emerged from the conference.

Distribution of Innovation

Academic Servers

Innovation in scholarly communication is forging ahead in a variety of arenas now that digitization and the World Wide Web allow informal distribution of information. Discipline-based servers dedicated to research fields (e.g., Paul Ginsparg's physics server—arXiv.org—or the RePEc economics server) or specific concepts (e.g., Neil Sloane's integer sequence server) are becoming essential platforms for scholars. These are sources for preprint and peer-reviewed articles, primary research, and an interactive exchange of ideas and even materials.

Traditional Publishers

Commercial ventures, such as Kinko's and Amazon.com, are also having a significant impact on the publication and distribution system that was once solely the domain of libraries and traditional publishing houses. The trend toward publisher-determined aggregations of journals with full-text access to articles and the added value in several traditional abstracting and indexing services that provide the ability to link from a citation to the full text of an article are examples of publishers' efforts to redesign their services to take maximum advantage of digital technology.

Library & Publisher Cooperative Initiatives

SPARC and JSTOR are examples of cooperation between libraries and publishers to maintain the values of academe in the publishing and distribution of, and access to, scholarly resources in the new digital landscape.

User Behavior in Digital Library Collections

Obsolescence of Journals?

There is growing awareness that users want collections of articles rather than collections of journals. Research findings from the PEAK project support this conclusion. In the PEAK study, 12 colleges and universities received access to all the content from 1,200 Elsevier Science titles using a variety of pricing and subscription models. Data from the study show the 80/20 rule in action: 80% of the use came from 20% of the articles. The PEAK study also found that library patrons used articles from nonsubscribed journals to a higher degree than anticipated.

JSTOR data also support this idea, showing that a few articles are used repeatedly while others have never been used.

Usage Patterns

Paul Kantor (Rutgers University School of Communication, Information, and Library Studies) reported on user behavior from the Columbia Online Books Project, a longitudinal study of use of online scholarly monographs. Among other things, this study revealed a variety of usage patterns for online books. For example, some users viewed the material in order (A, B, C, D), others jumped around (B, D, A, C) but viewed each section only once, others jumped back and forth (A, C, A, D, B, C). The pattern of use varied by the type of book (textbook, tradebook, scholarly book). This study also found that digitized books received about three times the use of their print counterparts, in terms of the number of downloads compared to the number of times an item was checked out from the library.

Users Highly Sensitive to Obstacles

Andrew Odlyzko (AT&T Labs), Clifford Lynch (Coalition for Networked Information), Bob Gazzale (PEAK), and others discussed another aspect of user behavior: even the slightest barriers to access discourage users. These barriers, or "costs," include a multitude of physical limitations in traditional libraries (e.g., limited hours, misshelved or lost material, confusing classification systems) and new barriers for digital resources (e.g., long connect times, multiple search interfaces to learn, use of passwords, and reluctance to pay for material that used to be "free"). It was also pointed out that, to a growing degree, material that is not in the online catalog or another online format "ceases to exist." Users expect the resources they need to be easily available online and are less willing to track down print materials than they were in the past.

Research Opportunities
Data collection capabilities from digital collections are far more sophisticated, reliable, and precise than from print collections, providing abundant opportunities for research on usage and user behavior. User behavior data from the Columbia experiment is an example of the detail now available to researchers. Wendy Lougee of the PEAK project expressed the need to develop new metrics to measure a variety of aspects of digital libraries; she stressed the value of engaging economists in this discussion.

Impact of Digital Libraries on Traditional Library Operations

In response to the digitization movement, libraries are changing the ways they manage budgeting, staffing, and roles or work functions.

Expensive Added Value
Bruce Kingma (State University of New York at Albany) presented results of a study performed for the Canadian Institute for Historical Microproduction, which revealed that initial costs for digitizing were significantly higher than for microfiche reproduction but that use of the digitized version greatly exceeded the use of the other formats. This indicates that digitization may be cost effective over time, after the high start-up costs have been absorbed.

Shifting Workloads
Drexel University is an example of an early adopter of digital collections. Carol Montgomery described Drexel's move from a collection of 100 e-journals and 1,850 print journals in 1998 to a collection of 5,000 e-journals and 953 print journals in 2000. She described this transition's impact on staffing, shifting workloads, and new job functions. Administration, management, and computer network infrastructure all saw increases in responsibility. Technical services functions—including e-journal acquisitions, cataloging, and catalog maintenance—all required increased staffing. In addition to obvious reductions in staff to check-in, claim, and bind printed journals, fewer staff were needed for reshelving and stack maintenance. Montgomery believes that building and maintaining a digital library collection is far more complex than doing the same for a print collection due to the price and license negotiations that are required.

At one point, Montgomery stated, "It's hard to get rid of print!" and presented a short list of print-weeding strategies. Missing from her list, but not for long, was the suggestion from JSTOR's Kevin Guthrie to send back-runs of journals to JSTOR for archival digitization.

Economics of Scholarly Publishing

All the presentations acknowledged to some degree that the economics of scholarly communication are changing rapidly.

Serials Crisis Overview
Don King, co-author with Carole Tenopir of *Towards Electronic Journals* (Washington: Special Libraries Association, spring 2000), presented findings of research on scholarly journal publishing from 1960 to 1995. His presentation provided some historical context and helped explain how prices for journals—science journals in particular—increased so dramatically over the last 15 years.

Mary Case of ARL described early efforts by libraries to respond to these price increases, including journal cancellations, reduced monograph acquisitions, improved document delivery networks, and consortia. In 1989, ARL commissioned an economics consulting firm to analyze scholarly publishing trends. Their report pointed to the lack of competition in this market as a major contributing factor to spiraling costs. SPARC was created in 1997 by ARL to inject competition into the scholarly publishing market by facilitating the start-up of low-cost/high-quality academic publications. Case also described SPARC's history, partnerships, and current projects. SPARC has demonstrated remarkable impact already with a variety of new publications and outreach programs that have raised understanding of these complex issues across the nation.

Market Analysis
Mark McCabe, Georgia Institute of Technology, provided an economist's view of the market for scholarly communication. In explaining the serials crisis, he described library demand for scholarly publications as "inelastic," i.e., demand for the material is not affected by its price. Publication by academics is viewed as so essential (to both communication and certification processes) that no cost is considered too high and libraries are expected to pay whatever is necessary to obtain the material.

Further, library demand for scholarly publications creates a unique market environment. In the paper he presented, McCabe says, "Although most STM (science, technology and medicine) journals are highly differentiated even within sub-disciplines, cost per journal citation is minimized across a broad field of study, subject to a budget constraint, and the result is a demand for *portfolios* of titles. In other words, unlike most markets involving differentiated products, it is not appropriate to model demand as a discrete choice process. Rather, the typical library attempts to provide access to as many STM journals as possible through a combination of subscriptions and inter-library exchanges."

As commercial publishers analyzed the demand structure of libraries, they came to understand the profitability of acquiring more titles through mergers. As a few publishers gained greater market power they were able to increase the price of individual titles within the portfolios they had to offer.

McCabe concludes that these three factors—inelasticity of demand, library acquisition by portfolio within broad subject areas, and publisher mergers—all contributed to a higher rate of journal price inflation over the last several years than can be explained by the improved quality or increased publishing costs of the journals themselves.

Changing Sources of Revenue

Science magazine's Michael Spinella pointed out that the traditional revenue source for magazines—paid advertising—is not viable in the digital environment; people do not run across ads serendipitously online as they do in print. This is causing major rethinking of the economics of online publishing for several publishers. Both Spinella and Karen Hunter of Elsevier Science said their organizations are trying to develop flexible subscription and delivery options to accommodate the needs of a variety of individuals, colleges, and universities.

Conclusions

In wrapping up the conference, Jeff MacKie-Mason of the University of Michigan restated what several of the speakers had noted: electronic access is increasing the use of materials but we do not yet fully understand that use. Who is using the materials? From where is the use coming? What value is the use delivering?

Users are going to the World Wide Web for their information, in many cases bypassing the library. What does this mean for the role of the library in the future? Traditionally, libraries have maintained the authoritative record of scholarship and made that record broadly available. Will this continue to be the case?

Libraries must communicate the actual costs of digitizing collections to a wider audience and digitization must be understood not as a cost saver but as a value-added service.

Another theme raised is that major technological change and adaptation to new technologies takes five to ten years. We are probably in about year three in the move from print to digital collections. Changes in the next few years will, in all likelihood, continue to be breathtaking.

DIGITAL INITIATIVES

arXiv.org is a preprint physics server created by Paul Ginsparg and supported by the U.S. National Science Foundation, the U.S. Department of Energy, and the Los Alamos National Laboratory.
<http://xxx.lanl.gov/>

Columbia University Digital Library Collections Online Books Project developed a comprehensive evaluation methodology to be applied to the University's pilot project in online books. The Project, funded by a grant from The Andrew W. Mellon Foundation, ran from 1995 through 1999.
<http://www.columbia.edu/cu/libraries/digital/texts/about.html>

JSTOR, Journal Storage, is an independent nonprofit organization established to help the scholarly community take advantage of advances in information technology by digitizing the complete backfiles of core scholarly journals.
<http://www.jstor.org/>

PEAK, Pricing Electronic Access to Knowledge, was a project sponsored by the University Library and the Program for Research on the Information Economy at the University of Michigan. The project, which ran from 1996 through 1999, was a large-scale trial of production-quality digital library services hosted by a nonprofit intermediary, and a field experiment on the economics and usage of digital access to scholarly communications. <http://www.lib.umich.edu/libhome/peak/>

RePEc, Research Papers in Economics, is a series of interoperating electronic archives of academic economics papers. <http://netec.mcc.ac.uk/RePEc/>

Sloane's Online Encyclopedia of Integer Sequences is a searchable database of number sequences arranged in lexicographic order. <http://www.research.att.com/~njas/sequences/>

SPARC, the Scholarly Publishing & Academic Resources Coalition, is an alliance of research institutions, libraries, and organizations that fosters expanded competition in scholarly communication. <http://www.arl.org/sparc/>

SPARC NOTES

by Alison Buckholtz, SPARC Assistant Director, Communications

SPARC Joins ARL and ACRL to CREATE CHANGE

SPARC has joined the CREATE CHANGE campaign as an equal partner with ARL and the Association of College and Research Libraries (ACRL). The campaign, launched in January, works through libraries to inform faculty about their role in solving the scholarly communications crisis. For more information, see the campaign website at <http://www.createchange.org/>.

SPARC Partners

SPARC now has 11 partners who encourage competition in the science, technology, and medical (STM) journal marketplace with high-quality, low-priced, print and web-based journals. SPARC members are encouraged to apply their purchase commitment toward support of these outstanding publications and services. Partners include:

Crystal Growth & Design
Evolutionary Ecology Research
Geometry & Topology
Organic Letters
PhysChemComm
BioOne
Columbia Earthscape
eScholarship
MIT CogNet
Internet Journal of Chemistry
New Journal of Physics

For more information, see <http://www.arl.org/sparc/>.

SPARC Membership Update

SPARC now has 181 members from across North America, the U.K., Europe, and Hong Kong. Additionally, SPARC's seven affiliates include library organizations throughout Europe and Australia. In addition to endorsements from the Association of American Universities, Association of American University Presses, National Association of State Universities and Land-Grant Colleges, and others, SPARC recently received an endorsement from the Association of Universities and Colleges of Canada.

SPARC has instituted a new International Supporting Membership category open to non-North American academic institutions and research libraries. SPARC's International Supporting Members will contribute U.S. $1,000 in annual dues, with no purchase commitment required. This new membership category answers the needs of many non-North American institutions, which look to SPARC as a unifying, organizing force in their effort to respond to the high and fast-rising cost of commercial journals in the STM marketplace. Non-North American institutions are still encouraged to join SPARC as Full Members, under which terms they support SPARC partner journals through their purchase commitment. Full Members are also granted voting privileges in SPARC Steering Committee elections.

SPARC Speakers Bureau

SPARC continues to welcome contributions to the SPARC and CREATE CHANGE Speakers Bureau. Please send both your own names and suggestions for speakers (faculty, librarians, administrators, etc.) to Julia Blixrud <jblix@arl.org>, who is compiling the information. Also contact Julia if you are interested in a speaker for a particular event.

SCHOLARLY
PUBLISHING AND
ACADEMIC RESOURCES
COALITION

SPARC on Campus

Many SPARC members have begun planning campus events and have expressed an interest in learning about successful strategies. We would welcome information on programs you have already held and any upcoming programs being organized on your campus. We will include a place on the SPARC website to announce such events. We also plan to gather materials (flyers, handouts, promotional materials, etc.) from these events and act as a clearinghouse so that others might benefit from your experience. Please contact Julia Blixrud at <jblix@arl.org>.

BIOONE UPDATE

SPARC members answered the call to help fund BioOne's development, which is now underway and on schedule. BioOne recently signed a letter of intent with Amigos Library Services, naming Amigos BioOne's exclusive U.S. marketer and distributor. Amigos will also provide full customer and user support for the U.S. market.

BioOne is scheduled for launch in early 2001. A broad selection of the journals published by many of the American Institute of Biological Sciences's (AIBS) 70 member societies will form BioOne's core offerings. BioOne's development has been spearheaded by its collaborating organizations, including AIBS, SPARC, the University of Kansas, the Big 12 Plus Libraries Consortium, and Allen Press. BioOne has been funded by SPARC and Big 12 Plus member libraries, along with other institutions that are committed to playing a leading role in transforming scientific communications.

BioOne also recently installed its first Board of Directors. Alan Covich, Professor, Department of Fishery and Wildlife Biology at Colorado State University and President of AIBS, was elected Chair of the Board. The BioOne Board is responsible for guiding BioOne's policies and progress.

MEASURING SERVICES, RESOURCES, USERS, AND USE IN THE NETWORKED ENVIRONMENT

by Wonsik "Jeff" Shim, Assistant Professor, and Charles R. McClure, Director, Information Use Management and Policy Institute, School of Information Studies, Florida State University

In May 2000, ARL embarked on a project that will change the way in which ARL libraries collect, process, and use statistics and measures in the delivery of networked information resources and services. Directing the study are Charles R. McClure and Jeff Shim, of Florida State University's Information Use Management and Policy Institute, who have teamed with a group of 23 participating ARL libraries and with ARL staff to develop statistics and performance measures that describe information services and resources in the networked environment. The project's advisory committee, headed by Sherrie Schmidt of Arizona State University and Rush Miller of University of Pittsburgh, will provide feedback and suggestions that help shape the course of this project. This project is an important step in addressing issues such as resource allocation, improved service quality, and higher education outcomes in the networked environment.

While the ever-increasing number of electronic sources and the advent of the Internet as the primary vehicle for data provision and retrieval have opened many exciting opportunities for research libraries, they have also caused some frustration for library administrators. Networked resources and services tend to be more expensive than traditional services and there are not yet enough data that answer such critical questions as, "Who is using the services for what purpose, and what is the impact of new and improved services on the users and research institution?" Examples of possible statistics needed in this new environment include:

- count of electronic reference transactions;
- count of visits (sessions) to the library's website;
- counts of high-use and low-use web pages;
- count of sessions on specific databases;
- IP addresses for users of specific databases;
- time per session on specific databases;
- count of turn-aways per time period per specific database;
- primary use of selected electronic services and resources;
- hours of user training on electronic services conducted by library staff;
- cost per session on specific databases;
- count of full-text downloads per time period per database;
- file size of full-text downloads per time period per database; and
- count of on-site versus remote sessions per database.

These statistics are illustrative only—agreement on definitions and data collection methods to produce reliable and valid statistics, determination of the degree to which such statistics can be comparable across different libraries, and identification of linkages between such statistics and higher educational outcomes are all yet to be accomplished.

ARL libraries, however, are not sitting idle in the face of these problems. As seen in the ARL-sponsored meeting on New Measures held in February 2000 in Scottsdale, Arizona, several libraries are taking the initiative in collecting and reporting these kinds of data. The range of collected data and approaches is quite impressive. Thus, the objective of this project's initial phase (May–October 2000) is to tap into ARL libraries' best practices in statistics, measures, processes, and activities that pertain to networked resources and services.

Based on the knowledge inventory created in the project's first phase and drawing on previous initiatives such as the International Coalition of Library Consortia (ICOLC), an initial set of data that need to be collected will be identified and field-tested at selected libraries during the second phase of the project (November 2000–June 2001). This process will assess the degree to which such data collection is possible and the collected data are comparable among member libraries.

During the project's third and final phase (July 2001–December 2001), a set of refined measures will be proposed to ARL, complete with data descriptions and guidelines for data collection, analysis, and use. When the project is completed, the research library community will be in a much better position to describe both traditional and emerging electronic resources and services. The products from the project—a set of tools, processes, and techniques—will assist research libraries to better meet the needs of their users and make better decisions regarding the purchase and deployment of electronic services and resources. In the process, we will learn a great deal about the impact of networked services on existing services, technology infrastructure, and organizational structure.

One of the major concerns that ARL libraries share is the inconsistency in database vendor statistics. Typically an ARL library deals with several dozen database vendors, who provide statistics in different formats and with poor or inconsistent definitions. Furthermore, libraries often receive these vendor-provided statistics on an irregular basis. Working with an ARL Task Force on Statistics from Vendor-Based Database Products, at the end of the project, we would expect to reach an agreement with major database vendors on:

- data element definitions and terms;

- specific statistics and data that can be collected; and
- methods for reporting these data to libraries.

By bringing critical mass to bear in the marketplace, and working toward agreement on consistent data elements and definitions as well as more responsive reporting practices, one of the most visible and significant contributions of the project would be comparable and timely vendor reports.

Although establishing a set of measures that are collected across ARL libraries is an important goal in its own right, this project will also explore the possible relationship(s) between networked services and resources and higher education outcomes. Specifically, the project team will investigate where and how networked services and resources contribute to accomplishing selected outcomes. Activities toward this goal will be carried out throughout the project phases. Upon the project's completion, a proposal will be developed for potential funding agencies to support continued research and development on this issue, as the problem of demonstrating the importance and impact of network-based information services is becoming more prevalent in a wide spectrum of organizations.

This project is an important and exciting undertaking for several reasons:

- The decision of a significant number of ARL libraries to contribute money and staff time to the project suggests that developing measures for networked resources and services is a critical problem that requires immediate attention.
- This project affirms the importance of learning from best practices. Time and again we discover that some of the best things are done by our peers. The project will be an exciting opportunity to showcase and promote the best practices that are happening in the area of measurement of networked information services and resources.
- Finally, this project demonstrates the value of collaborations among ARL libraries as we collectively deal with evolving technologies and changing environments.

Throughout the project's three phases, information about the study and its activities will be available through the ARL New Measures Initiative website at <http://www.arl.org/stats/newmeas/newmeas.html>, which also hosts resources relating to the other ARL new measures projects. For further information about any of the ARL new measures projects, contact Martha Kyrillidou, ARL Senior Program Officer for Statistics and Measurement, at <martha@arl.org>.

JOURNAL COSTS: CURRENT TRENDS & FUTURE SCENARIOS FOR 2020

The most recent edition of the *ARL Statistics* documents the continuing rise of serial costs. While ARL libraries spent 2.7 times more money for serials in 1998–99 compared to 1985–86, they bought 6% fewer serial titles. During the past 15 years, libraries shifted expenditures from monographs to serials to meet some of the demands of increasing serial prices, reducing the number of monographs purchased by 26%. A record low median of 24,294 monographs were purchased by ARL libraries in 1998–99, while the unit cost for monographs increased by 65%. Since 1986, the average annual increase in the serial unit cost for ARL libraries has been 9.0%; that of the monograph unit cost has been 3.9%. Both increases are higher than the general inflation trends in North America during the same period.

In a recently published article on the impact of publisher mergers on journal prices, Mark McCabe presents a new portfolio theory of publisher mergers to help us understand better the remarkable inelasticity (i.e., insensitivity to price) of library demand for serials, which gives publishers "a strong incentive to increase prices faster than the growth rate of library budgets."[1] With serial cancellations, some budget increases, and significant reductions in monographs purchased, library budgets have been able to absorb most of the serial price increases, as serial subscriptions decline only marginally compared to the price increases.

Assuming library and publisher markets continue to behave in the same way, and projecting the average annual rates of change into the future, the median ARL library will be paying $1,632 for a journal subscription and $107 for a monograph in 2020 (see Scenario 1 in accompanying table and chart). Such a library will lose purchasing power, buying only 13,700 serials and 15,048 monographs—16% fewer serials compared to 1986 and 54% fewer monographs. See Scenario 2 in the accompanying table for a projection for 2020 where the median library maintains its current purchasing level and Scenario 3 for a projection that shows how much the median library would have to spend in 2020 to purchase a modest 1% more serials and monographs per year over the next 20 years.

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The ARL Statistics 1998–99 *can be purchased in print from ARL Publications <pubs@arl.org> for $79 ($39 for members). Machine-readable datafiles are available for downloading or interactive web analysis at <http://www.arl.org/stats/arlstat/>.*

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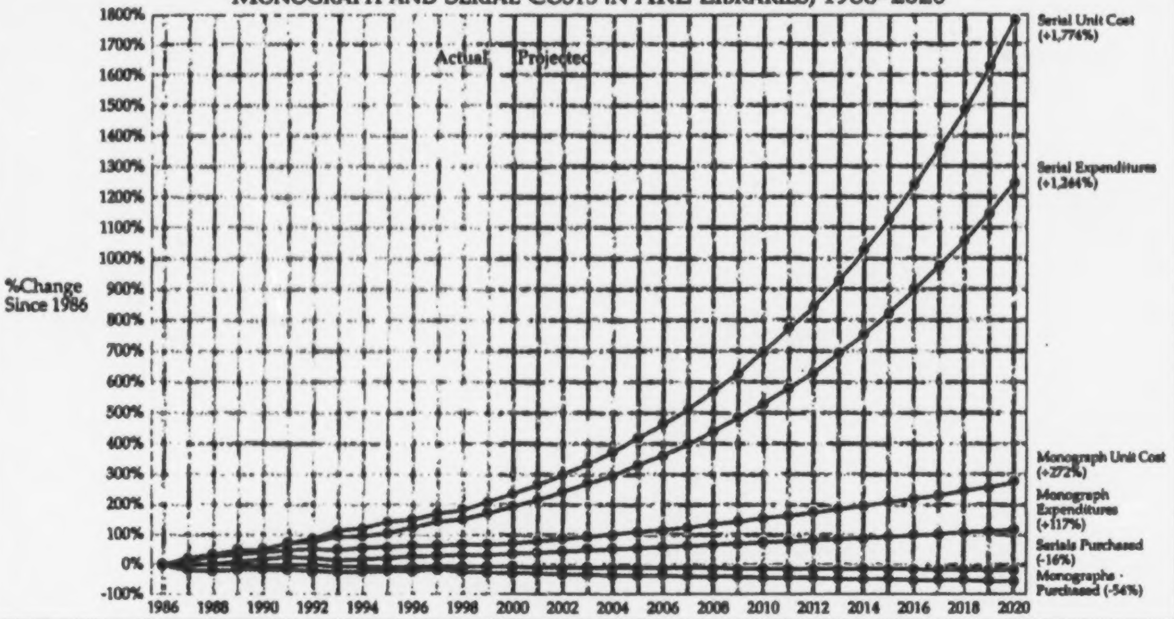
[1] Mark J. McCabe, "The Impact of Publisher Mergers on Journal Prices: An Update," *ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC*, no. 207 (Dec. 1999): 4, also available at <http://www.arl.org/newsltr/207/jrnlprices.html>.

Source for chart and table: *ARL Statistics* data and forecasts performed by the ARL Statistics and Measurement program.

MONOGRAPH AND SERIAL COSTS IN ARL LIBRARIES, 1986–2020



MONOGRAPH AND SERIAL COSTS IN ARL LIBRARIES, 1986–1999, 2020
MEDIAN VALUES* AND AVERAGE ANNUAL PERCENT CHANGES

Year	Serial Unit Cost	Serial Expenditures	Monograph Unit Cost	Monograph Expenditures	Serials Purchased	Monographs Purchased
(No. of Libraries)	(40)	(103)	(62)	(99)	(40)	(62)
1986	$ 87.09	$1,517,724	$28.67	$1,120,645	16,312	32,679
1987	$104.79	$1,770,567	$31.79	$1,064,484	16,600	26,240
1988	$116.65	$1,979,604	$35.83	$1,141,226	16,456	25,570
1989	$128.22	$2,130,162	$38.39	$1,241,133	16,298	27,082
1990	$130.07	$2,304,744	$40.34	$1,330,747	16,221	27,545
1991	$150.02	$2,578,309	$42.16	$1,400,738	16,250	27,524
1992	$161.74	$2,630,827	$43.62	$1,353,865	15,896	26,344
1993	$184.49	$2,919,756	$42.76	$1,295,807	15,668	25,188
1994	$190.26	$2,932,091	$44.51	$1,309,807	15,698	25,341
1995	$211.48	$3,133,885	$45.13	$1,365,575	14,741	25,707
1996	$219.19	$3,393,307	$46.76	$1,444,015	15,223	25,911
1997	$234.55	$3,674,368	$46.58	$1,460,234	15,450	28,576
1998	$244.18	$3,818,832	$47.94	$1,486,764	15,615	24,447
1999	$267.09	$4,098,075	$47.40	$1,506,651	15,259	24,294
Average annual % change	9.0%	7.9%	3.9%	2.3%	-0.5%	-2.3%
Scenarios for 2020, assuming annual rate of change for unit costs remains constant						
Scenario 1[†]	**9.0%** $1,632	7.9% $20,390,881	**3.9%** $107	2.3% $2,430,310	-0.5% 13,700	-2.3% 15,048
Scenario 2[‡]	**9.0%** $1,632	9.0% $25,034,352	**3.9%** $107	3.9% $3,364,644	0.0% **15,259**	0.0% **24,294**
Scenario 3[§]	**9.0%** $1,632	10.0% $33,359,779	**3.9%** $107	5.0% $4,197,473	1.0% 18,805	1.0% 29,940

Figures in bold are held constant.

[*] Time series for "Serials Purchased" and "Monographs Purchased" revised due to missing data.

[†] Scenario 1: Rates of change for all variables remain the same. (Depicted in chart.)

[‡] Scenario 2: Numbers of serials and monographs purchased remain the same.

[§] Scenario 3: Modest increase in numbers of serials and monographs purchased.

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FEDERAL RELATIONS

Prudence S. Adler, Assistant Executive Director, Federal Relatons and Information Policy

UCITA UPDATE

As many have detailed, there are state-based efforts underway to develop a new uniform legal framework for computer information transactions. The Uniform Computer Information Transactions Act, or UCITA, as the legislation is called, is in different stages of consideration in many states and is expected to be introduced in more states soon. UCITA has been approved by the state legislatures of Virginia (effective 1 July 2001 following a review process with possible amendments) and Maryland (with some changes). This follows the 29 July 1999 approval by the National Council of Commissioners on Uniform State Laws (NCCUSL). The effects of UCITA's passage are very significant for the library and educational communities.

Based on discussions with the ARL community and beyond, ARL is working with member libraries to develop state-based responses to UCITA.[1] ARL's role includes providing educational materials, key contacts, and other necessary information. ARL, with others in the public and private sectors, is seeking changes to UCITA via the 4CITE coalition <http://www.4CITE.org/>.

The following article is an excellent discussion of UCITA. Originally developed for the Maryland community, it is showcased here because it also provides a useful context for understanding the implications of UCITA to the higher education and library communities in other states.

DIGITAL INFORMATION: UCITA OFFERS A NEW LEGAL FRAMEWORK

by Rodney J. Petersen, J.D., Director, Policy & Planning and Project NEThics, University of Maryland, College Park

In the U.S., the latest policy debate regarding copyright has moved from the halls of Congress to the legislatures of the various states. The Uniform Computer Information Transactions Act (UCITA) is the result of a 10-year effort to craft a new legal framework for transactions in computer information. UCITA is being introduced in all 50 states in an effort to create a uniform approach to contracts as they relate to computer software, online databases and resources, and Internet services. The bill is controversial because of concerns that it does not adequately protect consumers and it will permit contract law (instead of federal copyright law) to govern transactions for digital information.

The state of Virginia is the first to pass UCITA, although they have delayed implementation until 1 July 2001 and will spend the next year reviewing the bill to make amendments as necessary. The state of Maryland has also enacted a version of UCITA this past legislative session that will go into effect on 1 October 2000. The Maryland Senate's version of the bill includes several key amendments that address a majority of the concerns of the consumer protection division of the State Attorney General's office. However, amendments offered by the library and education communities have been rejected as unnecessary because of the belief that federal copyright law will trump state contract law.

For many legislators, UCITA is primarily about extending the Uniform Commercial Code (UCC) provisions to "computer information." If it were as simple as updating the UCC, the proposal before the Maryland General Assembly would have been the original Article 2B language, but even the national legal authorities could not agree on its provisions. The 10-year process to draft Article 2B—standard rules for regulating licenses of information products and intellectual property—started as a joint effort of the National Conference of Commissioners on Uniform State Laws (NCCUSL) and American Law Institute (ALI). The original idea was to adapt the UCC's provisions for "goods and services" to also apply to "computer information," especially computer software. The ALI did not find the proposed changes to the UCC to be fair and reasonable and withdrew from the process; thus, NCCUSL had to abandon its effort to introduce legislation under the UCC and offer it instead as a stand-alone uniform law.[2]

The University of Maryland community would have been far more comfortable with UCITA had it focused narrowly on "computer software programs" and attempted to deal with some of the more problematic aspects of "shrinkwrap" license terms, including the University's interest in preserving our ability to fulfill our teaching and research missions, which is jeopardized by software license terms that prohibit "reverse engineering" and "criticizing software products." We could have come to some reasonable compromise on these issues. However, UCITA's provisions reach far beyond computer software, and we should not take the public policy implications lightly.

UCITA's broad language will have significant implications for the core mission of the nation's universities: the creation and dissemination of knowledge. Knowledge flourishes in an environment where access to information is "free" (not necessarily without costs, but void of unreasonable constraints on access and preservation). As has been said numerous times throughout the deliberations in the state of Maryland, copyright law has provided a legal and public policy framework for balancing the rights of creators and users. Copyright law over the years has also refused to protect facts and ideas—protecting only the "expression" of those ideas. "Facts and ideas" (whether in digital form or not) should be freely available (this time I mean without cost or constraint) if we wish to encourage innovation, competition, and the creation of new copyrighted expressions; however, UCITA will now achieve a protection for facts and ideas (at least in their digital form) that the proponents have been unsuccessful in convincing Congress to provide under federal copyright law.

According to the chair of the Maryland House of Representatives workgroup (speaking on the House floor), "information" in digital form will now be subject to a new legal framework that will be governed by contracts and license terms; he also argued on the floor that "fair use" is no longer appropriate when the information is "digital." He further summarized the four factors of "fair use" such that "nature of the material used" means whether it is digital or not. That is precisely why many of us who have followed the development of UCITA believe that it undermines copyright law and endangers the fundamental mission of our research universities.

Some have also argued that higher education can continue to protect its interest through the negotiation of computer information agreements. However, my experience leads me to wonder if software vendors and commercial publishers will act to preserve (through license terms) the balance and fundamental fairness that higher education has enjoyed under the framework of federal copyright law. We can already point to clear evidence of that assertion by examining the anticompetitive, anti-innovation language of existing "shrinkwrap" license terms. Are we overestimating the goodwill of information distributors and the bargaining position of nonprofit entities, including libraries and universities, to assume that UCITA will maintain a "level playing field"? One only has to look at who has been at the table the past several weeks in support of this bill (Microsoft, AOL, Elsevier Publishers, Lexis-Nexis, and NASDAQ) to be very skeptical about its intended results. Furthermore, the extension of UCITA principles beyond computer software to include online databases, electronic books and journals, and contracts for Internet services carries with it significant public policy implications.

I am greatly troubled by UCITA. My role in an information technology division causes me to recognize the need for a uniform and predictable legal environment for the facilitation of e-commerce in the states. However, UCITA as it is conceived and as the debates over the past several weeks in Maryland have demonstrated is not a law that will lead to uniform and predictable results. In fact, UCITA is likely to have the opposite effect. Creators and users of copyrighted materials now look to a singular source of law for the protection and regulation of information, i.e., the United States Copyright Act of 1976.

Despite several years of updating the 1976 Copyright Act to address the digital environment, namely the Digital Millennium Copyright Act (DMCA), UCITA proponents claim that greater protections are needed for digital information. The result intended by the drafters of UCITA could be a disastrous dual system of protections where some information items (i.e., analog materials) will remain covered by the federal copyright statute whereas other items (i.e., digital materials) will be covered under a new, untested law (i.e., UCITA) that governs contracts. Furthermore, since the contract terms offered by licensors of computer information are likely to vary among vendors and the nature of contract negotiations will result in terms and conditions that will vary from one information license to the next, the communities that rely upon access to the information that we acquire will be subject to multiple agreements.

Most importantly, UCITA has the potential to undo the fundamental public policies that have been carefully considered and developed under federal copyright jurisprudence for over two centuries. The U.S. Constitution first embraced intellectual property protection "to promote the progress of Science and the Useful Arts," and Congress has made numerous revisions to federal copyright law over the years to create a framework that effectively balances the rights of creators and users of copyrighted works. Furthermore, copyright proprietors and the educational community have engaged Congress over the past decade to address the challenges brought forth by digital technologies, resulting in the strengthening of the 1976 Copyright Act in 1997 (No Electronic Theft "NET" Act) and again in 1998 (DMCA). UCITA has the purpose and effect of displacing the carefully considered federal copyright system and its corresponding public policy considerations with a new contract regime that has the potential to exclusively favor proprietors of copyrighted information.

The digital age in which we live and work presents new challenges and opportunities. The difference between buying information and licensing information is significant; it is also an inevitable direction given the efficiencies of online access to information products. The new economy demands that we rethink existing policies, practices, and even laws. However, the strategies that UCITA seeks to implement are far reaching and have the potential to disrupt one of the most exciting and successful economic booms ever experienced in this country. It seems that the information economy is thriving despite UCITA.

[1] James G. Neal, Dean of University Libraries, Johns Hopkins University, testified before the Maryland General Assembly on 3 February 2000; his testimony is available at <http://www.arl.org/info/frn/copy/nealstmt.html>.

[2] For background on the debates within NCCUSL and ALI and the issues at stake for the educational community, see Laurel Jamtgaard, "Licenses and Information Policy: An Update on UCC Article 2B," *ARL: A Bimonthly Newsletter of Research Library Issues and Actions* no. 198 (June 1998): 1–4, also available at <http://www.arl.org/newsltr/198/ucc2b.html>.

DIVERSITY

DeEtta Jones, Director of Diversity Initiatives

REFLECTIONS ON THE BIG 12 PLUS "DIVERSITY NOW" CONFERENCE

by Lea H. Currie, Reference Librarian and Education Bibliographer; Vicki Coleman, ARL Visiting Program Officer and Head, Engineering Library; and Jeff Bullington, Reference Librarian, University of Kansas Libraries

We were part of a group of library staff, librarians, and administrators from the University of Kansas who attended the conference, "Diversity Now: People, Collections, and Services in Academic Libraries," sponsored by the Big 12 Plus Libraries Consortium and hosted by the University of Texas at Austin on 3–4 April 2000. Information highlighting the best diversity practices in academic libraries was dispersed through a combination of keynote speakers, panel discussions, contributed papers, and table talks. As a group, we were enthused by the wealth of disseminated information encompassing all of the differences that make each of us unique—culture, ethnicity, race, nationality, gender, age, opinion, religion, belief, education, experience, sexual orientation, disability, etc. The purpose of this article is to share notes from the many meetings that we attended and to discuss some of the prevailing themes of the conference, i.e., recruitment and retention of a diverse workforce, communicating across cultures, building diverse collections, and managing a diverse workforce.

Recruitment and Retention

Several programs at the "Diversity Now" conference focused on recruitment, retention, and development of a diverse library staff. An organization is only as strong as the people who comprise it. As the composition of the workforce continues to change, the need to understand and respond to one another grows stronger. To recruit and retain employees, libraries must respond to the diversity and inclusion needs of the people who are responsible for carrying out the mission of the library.

Some institutions have developed residency programs with the intent of attracting underrepresented groups into the field of librarianship and exposing them to the profession. Presenters involved with the University of Minnesota's residency program talked about the successful and challenging aspects of their program. Many of their participants stated that the program enhanced their knowledge of library automation and technology, afforded an opportunity to develop and complete a project, and offered great opportunities for networking within the profession. Similarly, the objective of the American Library Association (ALA) Spectrum Initiative—the profession's largest diversity effort—is to expose interested individuals to the profession. Those actively involved with this initiative addressed questions regarding reasons for applying for the Spectrum scholarship, expectations upon entering the profession, and organizational response to Spectrum scholars.

Barbara Immroth of the University of Texas at Austin Graduate School of Library and Information Science reported on the Texas Library Association's efforts to support diversity in library school admissions and to support the ALA Spectrum Initiative in the wake of the Hopwood Decision ending affirmative action in college admissions in the state of Texas. Linda Musser of the Pennsylvania State University System discussed the results of a Penn State task force appointed to investigate and recommend improvements in the recruitment and retention of a diverse library staff. Polly Thistlewaite of Colorado State University presented her preliminary analysis of data on domestic partner benefits access. She argued in favor of providing benefits to nontraditional families and discussed the impact such a policy might have on employee recruitment and retention, staff morale, and university politics.

Communicating across Cultures

The long-term viability of academic libraries is dependent on the ability of its employees to communicate with one another and the clientele they serve. For this reason, library administrators seek strategies to create a climate where employees can communicate openly and honestly and are encouraged to share innovative points of view. As service providers, library staff must be able to communicate with diverse populations of users and convey sensitivity to their needs and cultures.

In his presentation on "Communication and Teaching: Education About Diversity in the LIS Classroom," Mark Winston of the School of Communication, Information, and Library Studies at Rutgers University provided information for a better understanding of why people have difficulty discussing issues of race, racism, gender, and sexism. He contends that by identifying approaches to more productive communication, we can bridge communication gaps.

Bertie Greer of the University of Detroit–Mercy and Denise Stephens and Vicki Coleman of the University of Kansas facilitated a table-talk discussion of the effect that gender has on work role assignments, coworker relationships, etc. The objective of the discussion was to afford both genders the opportunity to value each other's cultural diversity and to transcend the negative impact of gender-role spillover in the workplace.

During the session entitled "Healing Hearts, Enriching Minds: The Multicultural Storytelling Project and the Texas A&M General Libraries," Johnnieque Love, Candace Benefiel, and John Harer of Texas A&M University offered an enlightening presentation on how storytelling can be used as an instructional tool that adds to an individual's cultural literacy, enlivens a presentation, and relates otherwise esoteric subject matter to universal themes. The session began with a report citing evidence that storytelling is an effective tool for classroom instruction and is an effective means for promoting racial harmony in the classroom. A Kamishibai story—a form of storytelling from Japan—was told to illustrate the point that stories can transcend cultures. The session concluded with a slide show and discussion of the Multicultural Storytelling Festival held at Texas A&M this past spring.

Gloria Rhodes of California State University–San Marcos, presented a paper describing the use of active learning approaches for teaching international students basic research and library skills. The success of her teaching techniques was evidenced by the comfort level exhibited by international students in finding information to support their academic research needs and the positive feedback received with regards to the effectiveness of her instructional program.

Building Diverse Collections

To support the mission of colleges and universities, academic library collections must reflect both the people they serve and the larger global community. Several papers addressed collection development issues. Elaine Westbrooks from the University of Pittsburgh discussed her research on the acquisition of African American historical documents and access to those documents through the World Wide Web. Representatives from Pennsylvania State University presented a study of their statewide library system's implementation of a diversity policy in collection development. One of the more interesting aspects of this policy is the coding of orders placed with vendors by subject selectors. By coding orders, Penn State Libraries can track the expenditure of funds on diversity and multicultural materials. Jan Paris of the University of North Carolina at Chapel Hill discussed the cultural biases that influence decisions regarding which artifacts should receive conservation treatment. Irene Owens of the University of Texas at Austin imparted the history of ALA contributions to diversity and the history of ethnic collections, the institutions that have supported them, and the challenges to these collections in the future. At several of the sessions, the audience raised questions about opposition to diversity initiatives in collection development. In some cases, the presenters indicated that diversity initiatives and policies were met with some hostility.

Collection development issues were also addressed in several poster sessions. Carolyn Mahin of the University of Oklahoma, Anne Moore of the University of Massachusetts–Amherst, and Shari Clifton of the University of Oklahoma displayed information pertaining to the types of gay, lesbian, and bisexual material included in typical approval plans and published by small presses. Their research included holdings statistics for selected libraries; results indicated that selected libraries owned, on average, about 47.4% of the titles on the list of 1999–2000 ALA Gay, Lesbian, Bisexual, and Transgendered Round Table Book Award Winners and Finalists. Lola Willoughby of the University of California–Los Angeles (UCLA) presented a poster session entitled "Whose Life Is It Anyway? Selected Portrayals of Persons with Disabilities in Books and Film: 1930–1990." This poster session described efforts by the UCLA Library Committee on Diversity to educate itself, library staff, and the campus community about issues facing persons with disabilities. The session included depictions of individuals with physical disabilities in books, posters, screenplays, musical scores, and other materials as drawn from the UCLA Library collection.

Managing a Diverse Workforce

Successful management of an organization entails bringing together the talents, experiences, and distinctive perspectives of employees. Various conference presenters discussed factors that can inhibit library leadership's ability to elicit the best from its employees of diverse backgrounds. As Joyce Thornton of Texas A&M shared the results of a survey of job satisfaction of librarians of African descent, she pointed out that the survey respondents desired to work in inclusive environments where their contributions were valued and respected. Other presenters proposed the need for evolution of the traditional hierarchical management structure to more inclusively incorporate the added value of a diverse workforce. The paramount challenge for library leadership and management is to stay apprised of diversity issues and to cultivate inclusive work environments where people are secure in the knowledge that their efforts make a difference.

Overall, the conference program was well planned and extremely informative. The combination of presentation formats and variety of subject matter made the conference very appealing. We truly feel that we increased our awareness of the best diversity practices in academic libraries and look forward to tackling the challenges ahead of us as we implement them.

For more information on the "Diversity Now" conference, see <http://carbon.cudenver.edu/public/library/diversitynow/>.

ARL INITIATIVE TO RECRUIT A DIVERSE WORKFORCE

The current economic boom and accompanying low unemployment rate, the surge in technological development, and shifting U.S. demographics are placing unprecedented human resources demands on the library community. ARL libraries are calling on the Association to develop new programs that support and promote members' human resources management efforts—transforming the ways in which they recruit, deploy, and train their workforces to anticipate and meet the needs of current and future library users. "Growing our own" is a model being employed by a number of national and international organizations, a model whose adoption would benefit the research library world. The "grow our own" concept involves ARL—as a community—taking proactive steps to connect with, recruit, and develop our future workforce and leaders. This is exactly the purpose of ARL's new Initiative to Recruit a Diverse Workforce, which aims to support the educational goals of minority library and information science graduate students and employ them in a participating ARL library upon graduation.

Since its inception in October 1999, the Initiative to Recruit a Diverse Workforce has attracted 55 ARL member libraries as participants. The Initiative's funds are invested in a socially responsible portfolio, where they accrue interest based on principles of stewardship. An advisory group, consisting of four ARL member directors and two university deans, has designed the program's parameters and plans for future fundraising. The funds are used to provide stipends to, and secure employment relationships with, exceptional M.L.S. students from underrepresented racial and ethnic backgrounds. These stipends may supplement scholarships or other financial aid packages.

Stipend recipients agree to work for a minimum of two years in an ARL library upon graduation, either in a residency program or a position appropriately matching the applicant's experience. Several stipends have been awarded for fall 2000 and additional stipends will be awarded to new recipients annually. Stipend recipients will be mentored by ARL Leadership and Career Development (LCD) Program participants, have access to leadership training, and receive complete information about position openings in participating libraries. The Initiative is a tool that makes ARL libraries more competitive in the recruitment of racially and ethnically diverse professionals.

As an extension of the Initiative, ARL has redesigned its Career Resources Service. The ARL Career Resources website <http://www.arl.org/careers/> provides access to numerous recruitment and professional development services. Additionally, the Diversity Program is developing a Career Placement Service that will enhance member libraries' recruitment processes and create a forum for job-hunting librarians to post résumés.

For more information on the Initiative to Recruit a Diverse Workforce, or other research library career services, please visit the ARL Diversity program website at <http://www.arl.org/diversity/>.

Research Libraries Participating in the ARL Initiative to Recruit a Diverse Workforce

University of Alabama
University of Arizona
Arizona State University
Auburn University
University of California, Irvine
University of California, Los Angeles
University of California, Santa Barbara
University of Colorado, Boulder
Colorado State University
Columbia University
Cornell University
University of Delaware
Duke University
George Washington University
Harvard University
University of Illinois, Urbana-Champaign
Indiana University
University of Iowa
Iowa State University
Johns Hopkins University
University of Kansas
University of Kentucky
University of Maryland, College Park
University of Massachusetts, Amherst
University of Michigan
National Agricultural Library
University of Nebraska, Lincoln
New York Public Library
New York University
University of North Carolina, Chapel Hill
North Carolina State University
University of Notre Dame
Ohio State University
University of Oregon
Pennsylvania State University
University of Pittsburgh
Princeton University
Purdue University
Rutgers University
University of Southern California
Southern Illinois University
State University of New York, Albany
Syracuse University
University of Tennessee, Knoxville
University of Texas, Austin
Texas A & M University
University of Utah
Vanderbilt University
University of Virginia
Virginia Tech University
University of Washington
Washington State University
Washington University, St. Louis
University of Wisconsin, Madison
Yale University

HONOR

Poping Lin (MIT), LCD Program class of 1997–98, won the 2000 American Society for Engineering Education, Engineering Libraries Division, Best Paper Award. The award was given for her article, "Core Information Competencies Redefined: A Study of the Information Education of Engineers," *Leading Ideas* 11 (Dec. 1999): 2–7, <http://www.arl.org/diversity/leading/issue11/popinglin.html>.

ARL ACTIVITIES

Lee Anne George, Program Planning Officer

MELLON FOUNDATION AWARDS TWO LIBRARY GRANTS

The Andrew W. Mellon Foundation recently awarded two grants to ARL member institutions.

A $1 million grant was awarded to the University of Virginia's Institute for Advanced Technology in the Humanities, which will work with the University Library in a three-year project supporting scholarly research based on digitized primary resources. Some of the materials are already held by the Library; others will be developed and added to the Library's collections along with the electronic publications that result from the research. The project will address technical, procedural, and social issues that arise from the collaboration of scholars and libraries on creating, maintaining, and editing electronic data.

A $42,000 grant was awarded to the Yale University Library to fund a one-year pilot project—BYTES, Books You Teach Every Semester—that will be conducted by eight of the eighteen members of the NorthEast Research Libraries consortium (NERL). The participating institutions include: Columbia University, Cornell University, Dartmouth College, Harvard University, New York University, Syracuse University, University of Connecticut, and Yale University. Through pooling and analyzing bibliographic information about the reserves collections of the participating university libraries over the course of an academic year, in two areas widely taught to undergraduates—history and literature in the English language—the investigators will attempt to answer a series of fundamental, policy-shaping questions related to the potential digitization of books and other reading materials that support study and teaching in these areas.

TRANSITIONS

California-Berkeley: Gerald R. Lowell announced his resignation as University Librarian effective the last quarter of 2000.

Hawai'i: John R. Haak announced his intention to retire as University Librarian as of 1 July 2000.

Iowa: Nancy L. Baker, currently Director of Libraries at Washington State University, was appointed University Librarian effective 1 August 2000.

Missouri: Martha Alexander announced her retirement as Director of Libraries effective 1 September 2000.

Southern Illinois: Carolyn A. Snyder resigned her position as Dean of Library Affairs effective 1 July 2000.

Tulane: Lance Query was appointed Dean of Libraries and Academic Information Resources effective 1 July 2000. Dr. Query joins Tulane from his position as Dean of University Libraries at Western Michigan University.

Create Change

ON YOUR CAMPUS

Many ARL libraries have distributed the CREATE CHANGE brochure on their campuses. ARL, the Association of College and Research Libraries (ACRL), and SPARC have partnered to further expand the project. In June, all academic library directors will receive a letter outlining the initiative and referring them to a content- and resource-rich website. This website—<http://www.createchange.org/>—is directed toward faculty, administrators, and librarians. Its online advocacy kit and other resources provide libraries with the tools they need to launch a local campaign to "take back" scholarly communications.

CREATE CHANGE aims to:

- educate faculty on the serials issue in all its complexity by providing the appropriate content, tools, and skills;
- instruct faculty on ways they can advocate for and undertake change in scholarly communications;
- nurture would-be faculty leaders in this arena; and
- support library directors and staff, on whom the burden of educating faculty has fallen.

For more information about the CREATE CHANGE campaign, contact Mary Case, Director, ARL Office of Scholarly Communication, at <marycase@arl.org>.

<http://www.createchange.org/>

Washington: Betty G. Bengtson announced her intention to retire as Director of University Libraries in December 2000.

Other Transitions

American Library Association (ALA) Washington Office: La Gina Frink—previously a law librarian at Fletcher, Heald & Hildreth, P.L.C., a telecommunications law firm—was appointed legislative information specialist for the Office of Government Relations. Carrie Russell, former copyright librarian at the University of Arizona, was appointed copyright specialist for the Office for Information Technology Policy. Saundra Shirley was appointed telecommunications specialist for the Office for Information Technology Policy. Shirley previously worked with the Pennsylvania Senate Policy Development and Research Office with a focus on information and technology.

The Andrew W. Mellon Foundation named Ira H. Fuchs, Princeton University's Vice-President for Computing and Information Technology, to the newly created position of Vice-President for Research in Information Technology effective 1 July 2000. Mr. Fuchs will lead the Foundation's explorations of the use of digital technologies in teaching and research.

Boston Library Consortium: Barbara G. Preece was appointed Executive Director effective 1 May 2000. Ms. Preece comes to the Consortium from her position as Professor and Acting Dean for Technical and Automation Services at Southern Illinois University–Carbondale.

The British Library: Lynne Brindley, Pro-Vice-Chancellor at Leeds University, was named Chief Executive of the British Library effective 1 July 2000.

Committee on Institutional Cooperation (CIC): Thomas A. Peters was appointed Director of the Center for Library Initiatives of the CIC effective 1 January 2000. Peters formerly served as Dean of University Libraries, Western Illinois University.

Digital Library Federation (DLF): Daniel Greenstein was named Director of the DLF effective 1 December 1999. Mr. Greenstein was founding director of the Arts and Humanities Data Service in the United Kingdom, a distributed organization that builds digital collections of interest in the arts and humanities and encourages their use in educational, library, and cultural heritage environments. He was also founding codirector of the Resource Discovery Network, a distributed service that seeks to enrich learning, research, and cultural engagement by facilitating new levels of access to high-quality Internet resources.

Also in December, the University of Virginia Library joined the DLF.

National Endowment for the Humanities (NEH): The White House named John W. Roberts Deputy Chairman of the NEH effective 22 February 2000. Roberts was formerly Chairman of Ohio State's Department of African American and African Studies. George Farr, who had served as Acting Deputy of the NEH, returned to his previous position as Director of the Division of Preservation and Access.

OCLC: In November 1999, William J. Crowe, Spencer Librarian at the University of Kansas, was elected chair of the OCLC Board of Trustees. Effective 1 January 2000, Hwa-Wei Lee, Dean Emeritus, Ohio University Libraries, was appointed to a one-year term as OCLC Visiting Distinguished Scholar.

OCLC Institute: Erik Jul was appointed Executive Director of the OCLC Institute effective 1 June 2000. Previously he served as Associate Director of the Institute.

ARL Staff

Linda Pinto, ARL Senior Administrative Secretary, retired effective 31 March 2000. In her over 30 years with ARL, she served in a pivotal role supporting ARL Membership Meetings, ARL Board of Directors Meetings, and maintaining the membership database and roster. **Charmaine McClarty** joined ARL on 24 April and assumed Mrs. Pinto's duties. A native Washingtonian, Ms. McClarty brings extensive executive and administrative support experience to ARL.

ARL OLMS welcomes **Carolyn A. Snyder**, Dean of Library Affairs at Southern Illinois University–Carbondale, as Visiting Program Officer effective 1 July 2000 and ending 31 December 2000. Dean Snyder will be working on the continued development of ARL's new distance learning capability, the Online Lyceum. Dean Snyder will dedicate her time during this six-month appointment to the program's three key operating priorities for this year: the acquisition of external funding; marketing and promotion; and the development of key collaborative partnerships with state, regional, national, and international organizations.

HONORS

Tim Berners-Lee, Director of the World Wide Web Consortium (W3C) and the widely recognized inventor of the World Wide Web, was honored as the first recipient of the Paul Evan Peters Award, which recognizes notable, lasting achievements in the use of networked communications to advance scholarship and intellectual productivity. Berners-Lee designed the first version of the protocol for transmitting information on the Web (Hypertext Transfer Protocol, or HTTP), the first version of Hypertext Markup Language (HTML), devised the method for addressing documents on the Web (now known as Universal Resource Locators, or URLs), and developed the first web server and the first web browser, which was also an editor. The award was presented by ARL and EDUCAUSE at the closing plenary session of the CNI Spring Task Force Meeting in Washington, D.C., on 28 March. It honors the memory and accomplishments of Paul Evan Peters (1947–1996), founding executive director of CNI. The award program is supported by an endowment from ARL, EDUCAUSE, Microsoft Corporation, and Xerox Corporation.

Kenneth Frazier, Director of the University of Wisconsin–Madison Libraries and ARL President, is this year's recipient of the Hugh C. Atkinson Memorial Award, which recognizes an academic librarian who has made significant contributions in library automation or library management, and has also made notable improvements in library services, library development, or research. The award is jointly sponsored by ALA's ACRL, LAMA, LITA, and ALCTS.

Sharon Hogan, University Librarian at the University of Illinois at Chicago, is the 2000 ACRL Academic/Research Librarian of the Year. The award recognizes an outstanding member of the library profession who has made a significant national or international contribution to academic research librarianship and library development. The award is sponsored by ACRL and Baker and Taylor Books.

North Carolina State University Libraries won in the university category of ACRL's new Excellence in Academic Libraries Award, for programs that deliver exemplary services and resources to further the educational mission of the library's institution. The award is sponsored by ACRL, Blackwell Books, and Blackwell Information Services.

University of Virginia Library Special Collections Department was chosen to host a National Historical Publications and Records Commission Fellowship in Archival Administration for the 2000–2001 academic year.

MEMORIALS

Eileen D. Cooke, 1928–2000

Eileen D. Cooke, former Director of the ALA Washington Office, passed away on 30 April 2000 at age 71 following complications with surgery. Ms. Cooke began her career as a librarian in her hometown of Minneapolis and moved to Washington, D.C., in 1963 to work in the ALA Washington Office. She became Assistant Director of the Washington Office in 1964 and assumed the Director position in 1972. During her tenure at ALA, Ms. Cooke played a major role in the development, renewal, and funding of key library legislation, including the Library Services and Construction Act, the Higher Education Act, the Elementary and Secondary Education Act, the Medical Library Assistance Act, the Copyright Revision Act, and the establishment of the National Commission on Libraries and Information Science. After 30 years of service, Ms. Cooke retired from ALA on 31 December 1993.

Jeanne Hurley Simon, 1922–2000

Jeanne Hurley Simon, stalwart advocate for libraries, died 20 February 2000 in her home in Illinois. Mrs. Simon made her political debut in 1956 by winning election to the Illinois House of Representatives from her suburban Chicago district. Four years later, she and her fellow House member, Paul Simon, became the only legislators in Illinois history to wed while both served. The historic tandem couple then worked side-by-side through several successful state campaigns and Senator Simon's candidacy for the presidency in 1988. Mrs. Simon chaired the National Commission on Libraries and Information Science, receiving the presidential appointment in 1993 and reappointment in 1997. Mrs. Simon became an adjunct professor of library services at Southern Illinois University–Carbondale in 1997, joining her husband in founding the SIU Public Policy Institute.

Clyde C. Walton, 1925–2000

Clyde C. Walton died in San Jose, California, on 4 January 2000, from complications related to Alzheimer's disease. Mr. Walton began his career as a librarian at the University of Iowa. He served as Director of the Northern Illinois University Library (1967–1978) and Director of the Library at the University of Colorado at Boulder (1977–1990). He served on several ARL committees, including the Committee on Preservation of Research Library Materials, OMS Advisory Committee, Microform Project Preservation Program Advisory Committee, and Committee on the Management of Research Library Resources.

ARL

ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC (US ISSN 1050-6098)
is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036.
202-296-2296 FAX 202-872-0884
<http://www.arl.org/newsltr/>

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Executive Director: Duane E. Webster
Editor: G. Jaia Barrett, Deputy Executive Director
Assistant Editor: Kaylyn Hipps
Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year.

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ARL CALENDAR 2000–2001

2000

July 24–25	**ARL Board Meeting** *Washington, DC*
August 17–18	Licensing Workshop *Seattle, WA*
October 4–6	Leading Change Institute *Washington, DC*
October 17–20	**ARL Board and Membership Meeting** *Washington, DC*
October 20–21	Measuring Service Quality *Washington, DC*
October 23–26	Library Management Skills Institute II: The Management Process *Atlanta, GA*
October 30–31	To Preserve & Protect: Strategic Stewardship of Cultural Resources cosponsored by ARL & the Library of Congress *Washington, DC*
November 1–3	Project Management Institute: Getting Things Done or Getting the Outcomes You Want *Seattle, WA*
November 13–15	Library Management Skills Institute I: The Manager *Evanston, IL*

2001

February 8–9	**ARL Board Meeting** *Washington, DC*
May 15–18	**ARL Board and Membership Meeting** *Toronto, Ontario*
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THE CASE FOR CREATING A SCHOLARS PORTAL TO THE WEB: A WHITE PAPER

by Jerry D. Campbell, Chief Information Officer and Dean of University Libraries, University of Southern California

Background

In September 1999, the Association of Research Libraries and OCLC hosted a meeting designated as a Strategic Issues Forum for Academic Library Directors. Held in Keystone, Colorado, and attended by 80 academic librarians, the meeting yielded a somewhat unexpected outcome when a consensus emerged that in the World Wide Web environment the library world is in danger of abandoning its constituency to commercial information services.

The basis for the consensus was not that libraries don't offer web access but rather the general nature of this access. Our existing library web pages are focused mainly on individual libraries and the resources and services they offer. Consequently, with rare exceptions web access hosted by libraries is not designed to serve as a general entry point for the larger world of web-accessible resources. Neither are the multitude of individual library web pages equal to a single, widely known, dependable beginning place for research in the web environment. For this reason, library users and librarians in search of web-based information turn instead (and are sometimes directed through library web pages) to search engines or information services created by what may be referred to in the new parlance as information.coms.[1] A number of recently created content providers may also be counted among the information.coms, including netlibrary.com, questia.com, and several ebook providers.

While they appreciated the benefits of such information.com portals, Keystone attendees nonetheless observed that these commercial portals were established on different values and principles than those espoused by the library community. In addition, the information.coms were seen as pursuing different goals and purposes than libraries. In light of this, the Keystone attendees concluded that libraries (and librarians) should take collaborative action to address this situation. In particular, Keystone attendees suggested that academic libraries should develop a full-service, shared web presence that they labeled "library.org." They also made a preliminary effort to describe the nature of a library.org presence and articulate the principles and values that might undergird it (see <http://www.arl.org/newsltr/207/keystone.html>). In addition, they considered the kind of business plan that might be required for its initiation.

Purpose

The purpose of this paper is to suggest that the Association of Research Libraries should seriously pursue the feasibility of developing a "library.org" web presence. For clarity, this paper will refer to the proposed web presence as the *scholars portal*, the domain name derivatives of which are available.[2] This paper will also suggest that this effort could best be undertaken in partnership with other agencies including OCLC and the Library of Congress. It is not the purpose of this paper, however, to argue the case for the Keystone Conference principles or outcomes, though that might indeed be an interesting and useful debate.

Similarly, the paper intends to argue only the general case that such a portal—a collective research library presence on the Web—is needed. Thus the paper will not propose and argue for a particular design or set of services for the *scholars portal*, though a brief outline of these will be suggested as a means of providing substance for the idea. If ARL chooses to pursue the concept, the real particulars of the portal must emerge as the result of careful thought and broad discussion. In the same fashion, the paper argues for the partnership noted above not in order to be exclusive but in order to provide the necessary critical mass of expertise to undertake development of a *scholars portal.* While increasing the number of partners adds complexity, the consideration of other strategic allies must be part of assessing the concept.

Justifications

With the availability of what already numbers several dozen information.coms, one might reasonably ask whether research libraries should bother taking concerted action to get into the web information portal business. After all, the information.coms offer a variety of different formats and approaches to finding information, and our constituencies are accustomed to using them. In addition, developing a *scholars portal* would undoubtedly be a complex and expensive undertaking and would require concerted action on a scale that has been difficult to achieve, let alone sustain, within the research library community. Letting a thousand flowers bloom, it turns out, has always been easier than cultivating a garden. And yet, there are sufficient reasons why ARL should consider pursuing such a project.

Among the most obvious of these reasons are certain inherent drawbacks and limitations common among the information.coms that appear when they are regarded from the scholar's point of view. Though each of these may be understandable, in some cases even expected, they nonetheless present fundamental difficulties for our constituencies. First among such drawbacks stands the undependable nature of the results of information.com services. This stems foremost from the basic reality underlying a ".com," namely, that it must be a net income-producing operation. Thus each information.com is based upon a business model that guarantees profitability. There are, of course, a variety of such models ranging from payment for direct listings to the display of banner advertising, with some being hard to detect and others being graphically obvious. The problem, however, is that each business model determines the architecture of the service and significantly affects its functionality in ways that are difficult or impossible to detect by the customer. In other words, results obtained through information.coms are not returned solely for their accuracy or quality but are based on unknown criteria—a circumstance unacceptable for scholarly research.

In addition, such services do not plumb to the depths of information ordinarily reached by researchers in subject disciplines. Conceptually, one might say that information.coms are horizontal rather than vertical information retrieval services. So except for the most straightforward types of inquiries (those aimed at known sources, high-level key words, aggregated data, current events, and so on), their ability to facilitate what the academy considers in-depth research is extremely limited. In the best of all possible web-based worlds, the subject library of the future might be conceived of as a highly customized, narrowly focused search engine adapted to the character of publications and research habits of a discipline. This is not, however, the nature of current information.coms and there is no evidence yet that one or more will evolve in this direction.

Indeed, the largest drawback of all may be precisely that information.coms in general have not been designed with the particular needs of the research community in mind. Rather, for good business reasons, they appear focused on broad customer bases and the most common information-seeking activities of the general public. This may simply be a necessary condition for success with commercial enterprises. More limited niche markets are certainly not prohibited in the commercial world, and indeed, some are beginning to appear in the education sector. At this time, however, the information.coms with an education focus are aimed more at providing content than web searching and are still able to offer only small and basic collections as gauged by research library standards.

In addition, these and other information.coms are proprietary and distinct and are themselves in some need of aggregation for portal access.[3] For instance, while one will occasionally find information on a university web page about how to search the Internet including a listing of search engines, never will one encounter such a listing when accessing an information.com, since it would be self-destructive to promote one's competition. Thus, ironically, the information.com world, while replete with help for web information seekers, in the final analysis adds to the overall complexity of the situation.

There are other more proactively positive reasons that ARL, along with strategic partners, should undertake to build a *scholars portal.* One may be simply that there is arguably no other agency (or group of agencies) with the breadth of awareness, the information, the skills, and the objectivity to succeed at doing so. This is not meant to be a grandly arrogant statement but rather to point out the unique character of the research library community: the libraries themselves, those who operate them, their not-for-profit status, and the potential resident therein for making sense of the world's largest unmanaged database, the World Wide Web. In other words, research librarians can likely create a *scholars portal* better than anyone else.

Perhaps less noble but still important is the growing fact that increasingly the world's business, including the business of research, is becoming web-based. Those agencies that wish to survive, let alone thrive, are busily developing new web architectures and exploring how to migrate significant portions of their business to the web environment. In the academic community, this move to the Web includes internal administrative business functions and increasingly the core functions of teaching and learning. Similarly, in the research library environment, integrated systems and digital library experiments have migrated to web-based functions almost totally. As of yet, however, this move to the Web for research libraries does not include an effort to make sense of the Web itself. Thus, there is an opportunity for ARL both to perform a service and to heighten its visibility by playing a leadership role in designing and developing a *scholars portal*. Conversely, failure to create such a collective web presence and service may mean that research libraries as a collective, and ARL, will become increasingly invisible to the web generation.

Finally, perhaps the most persuasive arguments in favor of ARL undertaking this project are the magnitude of the need and the significance of the opportunity. Scholars must be able to depend upon the veracity of the results of their efforts. At the moment, there is simply no satisfactory means of certifying results obtained from the information.coms. The proposed *scholars portal* recommended here would reflect the values inherent in the scholarly community, including the zeal for accuracy and dependability of data. These "academic" biases ideally would be clearly revealed to the researcher on the portal. For these reasons, there may be no more significant contribution that ARL could make to present and future generations than that of providing highly functional, dependable, and academically credible access to the Web.

> *...results obtained through information.coms are not returned solely for their accuracy or quality but are based on unknown criteria—a circumstance unacceptable for scholarly research.*

The Scholars Portal (scholarsportal.org)

The potential usefulness of a *scholars portal* is so extraordinary that it is tempting to describe such a wonderful service that it would be practically unachievable. The following description, therefore, must be thought of as categories of possibility that may be mixed in whole or part. They are also clearly not the only possibilities. Indeed, the real work (and the fun) will consist of creating the design of the portal, deciding what to include, and determining where to begin.

Content:

The *scholars portal* would promote the development of and provide access to the highest quality content on the Web. Through the efforts of a myriad number of agencies the information content of the Web is growing exponentially. What is needed, however, is the addition of information content of academically sound quality. The *scholars portal* would facilitate the addition of high-quality material by fostering standards, searching across databases, and offering a variety of supporting tools. As a result, libraries, corporations, and many other organizations would be empowered to contribute to an accessible, distributed digital library. The existence and efforts of *scholars portal*, therefore, would accelerate the growth of high-quality material and facilitate what has been referred to as the global relational research library.[4] Such a library could contribute to a reformation in the format of scholarly publishing and usher in access to a vast and heretofore largely unusable body of original material, specialized resources for communities of scholars, and accumulated scientific data.

Enhanced Services:

With the growing use of asynchronous learning methodologies, there is also an increasing need for extending certain elements of traditional library public services to the Web. This is already beginning to happen through experiments with virtual reference environments. Perhaps the most ambitious test of the virtual reference environment today is the Collaborative Digital Reference Service (CDRS) sponsored by the Library of Congress. The goal of CDRS is to provide professional reference service to users anywhere anytime by means of an international, digital network of libraries.[5] The service will include electronic responses to questions, including document delivery, when appropriate and 24x7 virtual access to a live librarian when necessary. To accomplish this, CDRS will utilize a cooperating group of libraries around the globe in a shared enterprise. Similarly, a group of research libraries have teamed with OCLC to propose the creation of a virtual science chat room where undergraduates will find 24x7 access to a librarian-staffed chat room to receive assistance with information in science, mathematics, and engineering.[6]

As these and other experiments succeed in establishing viable models for virtual reference services, the role of a *scholars portal* would be to discover and promulgate best practices, to expand the subject coverage of virtual reference, and to make such services accessible through a single gateway. In addition, *scholars portal* would foster the extension of web-based services further into document delivery, provision of specialized supporting materials, experimental shared work spaces, and activities in support of alternative scholarly publishing.

***Engines and Tools*:**
To begin with, *scholars portal* would provide a number of highly desirable gateway functions. These might include an explanatory guide to information.coms as well as cross-platform access to commercial databases. It might also offer sophisticated electronic thesauri to guide researchers toward areas of interest with precision. The goal would be for the *scholars portal* to be adopted as the place to start for anyone seeking academically sound information.

Thus, a primary function of the *scholars portal* would also be to provide researchers with an alternative means of retrieving dependable information beyond the capacity of the information.coms. Its goal would be to provide highly focused search engines adapted to the technical languages of the various academic specialties. By customizing search engines in this fashion and directing them to dependable sources of information, *scholars portal* would evolve increasingly "intelligent" automated systems and improve the success rate of query systems.

The foundations for moving in this direction are already visible in the emerging capacities of OCLC'S Cooperative Online Resource Catalog (CORC). CORC represents the development of tools capable of automating the creation of metadata for web-based electronic resources, a necessary precondition for access.[7] Without CORC and other tools in the CORC suite, the volume of data on the Web would never be harnessed by manual techniques.

Conclusion: The Integrated Whole

Without doubt, the need within the academic community for a *scholars portal* is high, and the capacity to develop it is resident in ARL, OCLC, the Library of Congress, and other agencies. There is also no doubt that today represents a fleeting moment of opportunity to engage the effort. If the research library community accepts the challenge of and succeeds in creating the *scholars portal*, it will put a tool of immense value in the hands of the academic community. In doing so, it will for the first time in the web environment, bring together high-quality specialized content, commercial sources of data, viable search engines, and virtual human and machine-based assistance. It will also create an extraordinary and exciting new future for the research library community that draws on the best from its past adapted in form and function for the future. In the words of one ARL colleague, it will have created the real information commons.[8]

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[1] For one listing of such search engines and metasearch engines see the excellent website created by the University of Minnesota Duluth Library <http://www.d.umn.edu/lib/searchengines.html>.

[2] The name "Scholars Portal" was suggested by USC library faculty member Deborah Holmes-Wong. Following her suggestion, these domain name variants were reserved: scholarsportal.org; scholarsportal.edu; and scholarsportal.com. For purposes of this paper, the identifying phrase "*scholars portal*" will be italicized and utilized without an apostrophe.

[3] Some members of the commercial publishing industry may be taking a step in the direction of solving a portion of this problem through the development of the Digital Object Identifier, an identification system that would allow the linking of web-based information across the databases of different publishers. See <http://www.doi.org/>.

[4] Harold Billings (in press), "Shared Collection Building: Constructing the 21st-Century Relational Research Library," *Journal of Library Administration* (also delivered at the conference on "Research Collections and Digital Information," Oklahoma City, 2 March 2000).

[5] Information about the CDRS <http://lcweb.loc.gov/rr/digiref/> was supplied to the author by Diane Kresh of the Library of Congress.

[6] Information about the Real-Time Reference for Undergraduate Students in Science, Mathematics, and Engineering was supplied to the author by Gloriana St. Clair of Carnegie Mellon University. The project proposal is available at <http://www.library.cmu.edu/Libraries/24x7.pdf>.

[7] See <http://www.oclc.org/oclc/promo/10520corc/index.htm>.

[8] Billings.

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Postscript

As is indicated in this paper, the development of portals to provide entry points for web-based information has become an increasingly important topic within the commercial information sector. Additionally, academic institutions are using the concept of the portal to address issues of providing access to information in a cohesive manner for members of their communities (see, for example, the Boston College University-Wide Information Portal <http://www.mis2.udel.edu/ja-sig/whitepaper.html> and the effort by two-dozen Ivy League and state colleges to create portal software that can be shared <http://www.ja-sig.org/>). Harvard University and the Digital Library Federation have proposed a planning process to define the means by which research institutions can make information about their digital finding aids more accessible through harvesting metadata <http://www.clir.org/diglib/architectures/lycospub.htm>. Library conference programs, recent articles, and the new journal entitled Portal *speak to the library community's interest in portals. The above paper was prepared and presented by Jerry Campbell for discussion by the ARL membership at their May 2000 meeting to consider what role the Association should play in portal development for the scholarly community. Subsequent to the meeting, the ARL Board established a small working group to think through and recommend a practical vision for a Scholars Portal and a possible ARL role in developing such a proposal.*

"Big Heads" Library Materials Budget Survey Now on ARL Website

by Robert G. Sewell, Associate University Librarian for Collection Development and Management, Rutgers University Libraries

The Library Materials Budget Survey (LMBS), an important source of information on library materials budget trends among large research libraries, is now available via the ARL Office of Scholarly Communication website at <http://www.arl.org/scomm/lmbs/>. The LMBS began in 1986/87 within the ALCTS/CMDS/Chief Collection Development Officers of Large Research Libraries Discussion Group (CCDO, also known self-mockingly as "Big Heads"). I have compiled the CCDO's survey since 1996.

The membership of Big Heads, or the CCDO group, consists of the 40 largest university research libraries in North America, as well as the Center for Research Libraries, the Research Libraries of the New York Public Libraries, the Smithsonian Libraries, and the three U.S. national libraries—Library of Congress, National Agricultural Library, and National Library of Medicine. The website represents a cooperative effort among ARL's Office of Scholarly Communication, the ARL Statistics and Measurement program, and the compiler of the CCDO survey. This collaboration began two years ago when ARL created an interactive web form to assist in the gathering of data.

The data collected with the CCDO survey are different from and complementary to the data collected in the annual ARL Statistics related to library materials expenditures. The CCDO survey collects and analyzes more detailed information related to the sources of funds, how library materials budgets are constructed, and how the funds are being spent, broken down by certain types of materials, broad subject areas, and other categories. The Definitions section of the website defines each category of the survey and can be used as a guide to library materials budget terminology.

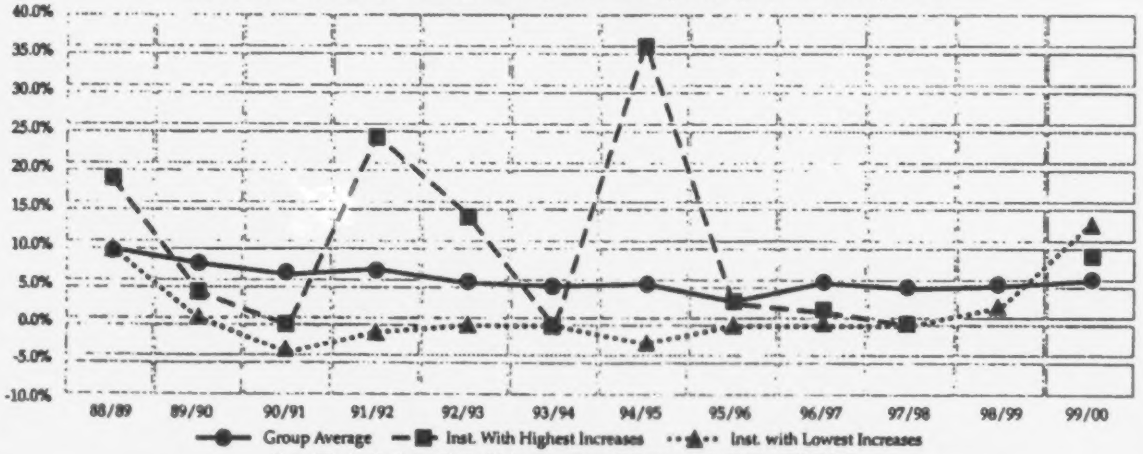
The survey is more informal and dynamic than the ARL Statistics, with more frequent additions and changes in categories to reflect emerging budgetary concerns. Furthermore, some of the figures included in the survey are not easily obtained and are "best estimates." But the CCDO group feels that best estimates are useful in documenting trends. Other differences between these two surveys are highlighted on the website.

The website includes annual Narrative Summary Reports from FY1996 to the present, and Detailed Historical Spreadsheets for each category from the year that the data were collected. The comparative information in the CCDO surveys has frequently been cited in budget justification statements among members of the discussion group.

The most closely watched categories and the first to be tracked in the survey are base budgets and the annual increases to them. The base budget represents a relatively stable, agreed-upon figure between the university and the library that is the basis for long-range budget planning. The base budget changes incrementally, ideally each year to reflect the cost of library materials and basic changes in programs.

During the 1990s, library materials base budgets did expand but not as rapidly as in previous decades and

CCDO Library Materials Base Budgets:
Annual Average Percentage Increases, 1988/1989–1999/2000



Note: The institution with the highest increases did not submit data for 1998/1999.

certainly did not keep up with inflation for library materials. The chart of annual average percentage increases to base budgets covering 1988/89–1999/2000 demonstrates that for the CCDO group annual increases were regular and significant. The overall average for the 12-year period was 6.1% per year. The two institutions with the highest and lowest base increases were both state institutions. The one with the largest increases changed radically from year to year and totaled more than 100% for the period surveyed. The one with the smallest increases (and actual decreases in some years) only increased by just under 20% for the entire period, barely enough to cover the inflation rate for serials for two years. Thus, while budgets did not technically "shrink" in the 1990s, the loss of "buying power" and the inability to keep up with new programs was substantial for some but less so for others.

The survey also shows that during the second half of the 1990s, when annual increases to the base were less than in the first half of the decade, the availability of "one-time funds" or annual supplements to the base budget increased. While this made long-range planning more difficult because of this "short-term" funding pattern, it helped keep overall expenditures up. Some institutions were forced to use these temporary increases to cover a portion of their serials expenses, generally considered a "fixed cost," to avoid more severe cancellations. While this practice violated traditional library materials budget principles, such risk-taking in budgeting for collections is now more common.

Categories added to the survey in the mid-1990s include Electronic Resources and Interlibrary Loan/Document Delivery. These two categories are difficult to track because some institutions do not fund these expenses entirely or at all from their library materials budgets, on which the CCDO survey focuses exclusively. Some institutions use the access budget for these categories. Furthermore, electronic resources in some state institutions, such as those in Ohio and California, are acquired primarily with statewide funds not reflected in a library's own budget. Given these caveats, both of these categories are rising significantly in the library materials expenditures. Expenditures for binding, an indicator of trends in the physical collection, however, have remained stable.

As noted above, as a mechanism to track trends, the CCDO survey is more informal and subject to change than the ARL Statistics. Another aspect of its informality is that corrections can be submitted after the results have been posted and group members are encouraged to supply missing data in the historical spreadsheets. So look for revised spreadsheets as well as future annual reports.

RESEARCH LIBRARY INTERLIBRARY LENDING: AN ISOLATED DROP OR THE BEGINNING OF A TREND?

by Mary E. Jackson, ARL Senior Program Officer for Access Services

The 1998–99 ARL Statistics[1] reveal an unexpected occurrence: a decrease in interlibrary lending from the previous year. In 1998–99, the 106 research libraries used for the time series filled a median of 26,688 interlibrary loan (ILL) requests, a decrease of 568 requests from the 1997–98 median of 27,256.[2] This slight drop in the median lending total is the first sign of slowing in the rate of lending since 1986 when the time series data began. As reflected in the chart of "Supply and Demand in ARL Libraries," the aggregate lending increase since 1986 is 65%; this is a four-percentage-point drop from the previous year.

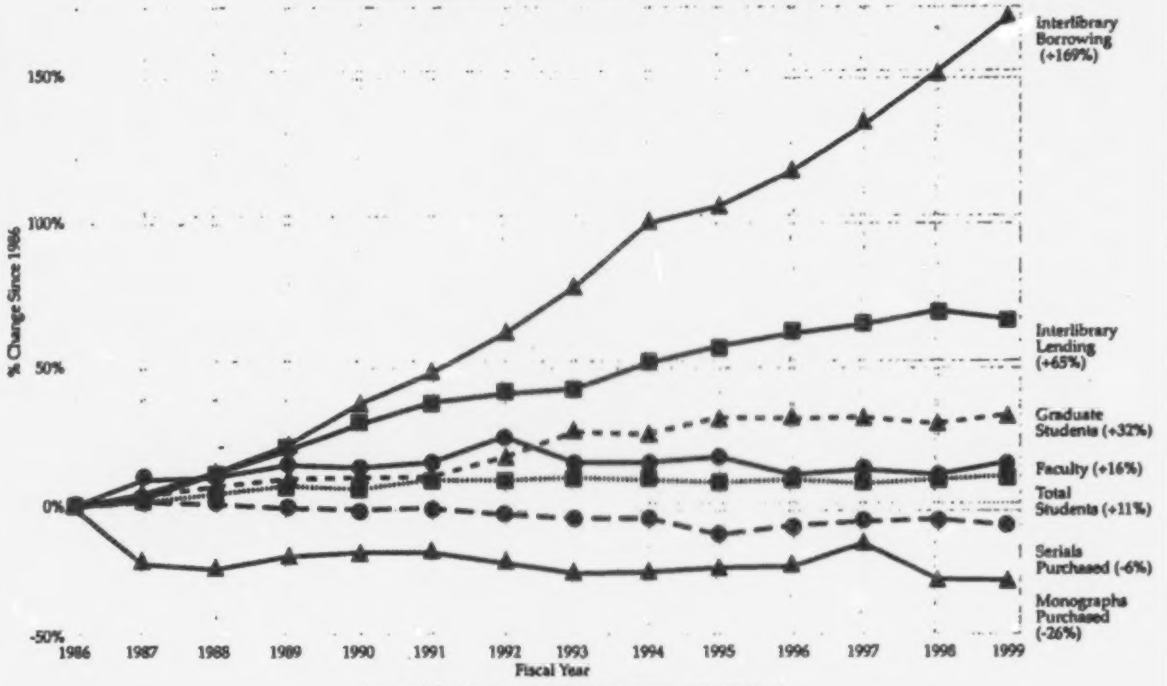
Lending is Slowing?

During the second half of the 1990s, the rate of increase in the aggregate ILL lending by research libraries slowed. The average annual percent increase dropped from 5.7% in 1995 to 3.9% in 1999. The decrease may be the result of a larger total volume of lending, but the data were examined closely to look for any signs that this may signal the beginning of a trend.

A library-by-library comparison of the lending totals for the past two years reveals some interesting findings. Some of these findings may have contributed to this year's decrease, but others suggest that lending should have increased. For example:

- Last year, for the first time, an ARL member library reported filling zero lending requests.[3] That library, Colorado State University (CSU), noted a cessation in lending due to its September 1997 flood. However, CSU alone did not account for the decrease in the median lending; the median would have decreased even if CSU had filled ILL requests at their pre-flood level.
- A total of 52, or 47% of the 111 lenders, reported fewer lending transactions in 1998–99 than in 1997–98. The 52 libraries reported decreases ranging from only five requests to over 29,900 transactions. The footnotes to the *ARL Statistics* include several possible explanations for these decreases—submission of revised data, building renovation, and revision in methodologies for counting and reporting ILL statistics.
- On the other hand, 59 libraries (53%) increased their lending totals, by amounts ranging from 94 to 27,287 requests.

Are there other possible factors that may be influencing research library patterns of interlibrary lending?



SUPPLY AND DEMAND IN ARL LIBRARIES, 1986-1999

Source: *ARL Statistics 1998-99* (Washington: ARL, 2000), 12.

Choosing Lenders Differently

The Research Libraries Group's (RLG) Research Libraries Information Network (RLIN) ILL Favorite Lenders and OCLC's Custom Holdings enable borrowing libraries to have lenders randomly selected. In 1998 OhioLINK changed the algorithm used to select the owning library to which patron-initiated requests are sent. These system-generated selections of lenders suggest that lenders may be chosen on a more random basis. In all three cases, borrowing requests are being sent to a greater number of lending libraries, which may decrease the number of ILL requests received by some research libraries.

Impact of Consortial Licensing of Electronic Resources

Are research library lenders finally seeing the beneficial effects of consortial purchases of electronic journals? ARL member libraries report only aggregate borrowing and lending totals; totals are not broken down by returnables (loans) and non-returnables (photocopies). Therefore, it is impossible to use these data to evaluate the impact of direct patron access to large collections of electronic resources. Such expanded access could explain a drop in research library lending but, at the same time, it should also trigger a drop in research library borrowing because users have local access to more, electronic materials. However, this drop is not reflected in the ARL data.

Use of Non-Library Sources

When needing to fill rush ILL requests, some borrowing libraries now purchase books from Amazon.com or other online book sellers rather than sending loan requests to libraries. Some borrowers also permit their patrons to order copies of articles directly from commercial document delivery suppliers. As noted above, ARL does not ask member libraries to report lending by returnables and non-returnables, so it is difficult to measure in the aggregate the impact of using these non-library suppliers to fill ILL requests.

Buying Fewer Titles

In 1986, research libraries purchased on average 16,312 serial titles and 32,679 monographic titles. By 1999, research libraries purchased 15,259 serial titles, or 1,053 fewer, and 24,294 monographic titles, or 8,385 fewer. To what extent does the reduction in the number of monographic and serial titles purchased by research libraries influence their level of interlibrary lending activity? Does the decrease in titles purchased directly decrease their lending volume?

Slowness of Lending
Could the decrease in lending requests be a result of research libraries' slower lending turnaround time? Some research libraries are unable to fill lending requests as quickly as other research or college libraries. It is unlikely that this year's drop is caused solely by turnaround time that may be slower than academic or public libraries, but it is another factor to monitor.

Lending Fees
The continued popularity of LVIS (Libraries Very Interested in Sharing)[4]—a reciprocal, no-charge agreement—enables libraries to find and send requests to libraries that do not charge to fill ILL requests. The preference to use libraries that do not charge may reduce the numbers of requests sent to research libraries, which traditionally have charged to fill lending requests.

Lack of Up-to-Date Serial Holdings
Another possible cause of the drop in lending is the lack of current serial holdings in the RLIN and/or OCLC catalogs. Lending requests may actually be increasing, but filled requests decreasing, as libraries are opting not to keep their serial holdings current on the national bibliographic utilities. There are no cost-effective ways to transfer holdings via tape load, FTP, or other electronic means. As a result, most research libraries have concluded that it is too labor-intensive, and therefore too costly, to maintain serial holdings in their online catalog and in one or more national bibliographic utilities. Libraries with declining lending could examine their unfilled lending requests to determine how many of the unfilled requests could stem from the lack of current serial holdings information in RLIN or OCLC.

Lack of Ariel or IFM
Another possible factor in the decrease in lending is that some research libraries do not use RLG's Ariel software to send all, or even some, of their non-returnables. Some research libraries using OCLC ILL do not bill via OCLC's Interlibrary Loan Fee Management (IFM) service. Borrowers looking for fast delivery or ease of payment prefer to use Ariel and/or IFM libraries.

Staff Shortages
Some ILL lending operations are understaffed and have established policies to accept only the number of lending requests their staff are able to process in a timely manner. These lenders reject a high percentage of requests and, as a result, many borrowers avoid those lenders.

Patron-Initiated Transactions
The introduction of systems that allow patron-initiated borrowing often results in a significant increase in interlibrary lending and borrowing. The instructions to the ARL Statistics Questionnaire state that libraries are to include patron-initiated transactions as ILL transactions rather than circulation transactions. In the past year, several research libraries recorded significant increases in lending that likely reflect the introduction of patron-initiated systems. These sharp increases would suggest an increase, rather than a decrease, in overall lending. However, it may be possible that some libraries are reporting patron-initiated lending as circulation, not ILL, transactions.

On the Other Hand, What about Borrowing?
Although the median lending has dipped for the first time in over a decade, research library borrowing continues to show steady increases as recorded in previous years. In 1999, research libraries borrowed 169% more than they did in 1986. On average, borrowing has increased 7.9% per year from 1986 through 1999. This increase may be a reflection of the continued challenges faced by research libraries to provide research materials to their users. Although research libraries have increased their spending on library materials on average 6.7% per year since 1986, and are now spending over $6.2 million per library, research libraries are collecting less due to reduced buying power.

Historically, research libraries have been more likely to borrow from another research library because those libraries were thought more likely to own needed material. It is possible that research libraries are beginning to shift some of their borrowing to non-research libraries, which would result in a drop in lending. Changes in research library borrowing patterns and preferences could also be contributing to changes in research library lending.

Conclusion
There is no single, obvious explanation for the decrease in this year's ILL lending. Individual libraries can only look for anecdotal explanations and speculate on factors that may have caused a decrease. One year is not a trend, but the unexpected decrease in the median lending volume provides an opportunity to examine lending behavior in detail and try to isolate factors that may be influencing the current year's lending levels.

[1] "Table 3, Supply and Demand in ARL Libraries, 1986–1999," *ARL Statistics 1998–99* (Washington: ARL, 2000), 11. The time-series data track the 106 libraries that were ARL members since 1986.

[2] The median is the number in the middle of the range of lending totals. Calculating averages rather than medians also shows a decrease but a very slight one (from 34,139 in 1997–98 to 34,094 in 1998–99).

[3] "Rank Order Table 14, Total Items Loaned (ILL/DD)," *ARL Statistics 1998–99* (Washington: ARL, 2000), 70.

[4] Additional information on the LIVS agreement may be found at <http://www.library.sos.state.il.us/isl/oclc/lvis_des.html>.

Richard K. Johnson, Enterprise Director, Scholarly Publishing and Academic Resources Coalition

A QUESTION OF ACCESS: SPARC, BIOONE, AND SOCIETY-DRIVEN ELECTRONIC PUBLISHING

The following is excerpted with permission from the full article of the same title in D-Lib Magazine 6, no. 5 *(May 2000), <http://www.dlib.org/dlib/may00/johnson/05johnson.html>.*

"Scholarship" is a term that refers to many different and independent endeavors that are unified, not as a single system, but by broad common goals and interests. Likewise scholarly communication takes place within many different and sometimes overlapping channels, not as a unified process. Because of this fragmentation, the battle for control of scholarly communication will be waged on many fronts. Indeed, a scramble by commercial publishers to gain web "channel dominance" in key fields has begun. In tomorrow's wired world, control of a critical mass of content will allow the owner to dictate terms and effectively "own" the user. After all, if there are 10 relevant web portals available to a user, and one of these offers access to 75 percent of the information in the field, that one will garner usage, profit, and brand identity. Few users will even bother to check the other sites. Unfortunately, reference linking protocols that permit users to navigate across sites don't necessarily solve the problem—not when pricing and licensing barriers present a locked door.

SCHOLARLY PUBLISHING AND ACADEMIC RESOURCES COALITION

Given the distinct benefits of channel dominance, it's no surprise that the stampede by commercial publishers to take over society journals and acquire competing commercial publishers has accelerated. These journals provide access to authors. In many fields they are the leading journals, the prestigious content needed to assure a leading role in the market. And society journals provide publishers an expedient means to fill gaps in their established list and to grab a share of important new sectors.

If this trend is left unanswered, it positions commercial publishers not just to prosper but to rule in the Internet Age. If the impact on scholarly communications of commercial publishers over the past several decades is any guide, the impact on scholarship and academe could be devastating.

Fortunately, this doesn't have to be. An historic opportunity and distinct strategic benefits are available to many societies if they rise to the challenge. In most fields, societies' journals are the traditional publications of choice—the "must-have" content. Societies are consequently in a position to guide, rather than to be the victim of, the changes taking place in publishing.

Partnering for Change

BioOne, one of SPARC's partners, illustrates the possibility of forging new mechanisms for collaboration among societies and academic institutions to assert leadership on a broader scale and assure a balanced market. An electronic aggregation of bioscience journals from dozens of small societies, BioOne is a bold initiative that assures scientific communication remains responsive to the needs of scientists and societies. Now in development, BioOne will aggregate, link, and make easily accessible peer-reviewed research in the biological, ecological, and environmental sciences. It enables leading nonprofit journals self-published by scientific societies to remain viable, and offers them a cost-effective alternative to commercial publishers' digital aggregations.

The BioOne Approach

BioOne was established as a nonprofit corporation governed by a board of directors representing academic institutions, library consortia, societies, and the private sector. With BioOne, societies enable users to navigate seamlessly among journals from different societies, assured that the price of access is motivated by goals of cost recovery and maximization of dissemination.

BioOne is remarkable for the assemblage of stakeholders who have come together to make it a reality. The initiative to create BioOne was announced in June 1999, and at the start the collaboration was almost the biggest news of all. BioOne was created by SPARC, the American Institute of Biological Sciences, University of Kansas, Big 12 Plus Libraries Consortium, and Allen Press—organizations representing key aspects of the scholarly communications process: scientific societies, libraries, and the commercial sector.

At the heart of the collaboration is the belief that society-based, high-impact alternatives to commercially published research can play a continuing and expanding role in science—and can be key forces in rejuvenating scientific communications.

Access, Revisited

Right now societies have a window of opportunity for action that will assure their viability, vibrancy, and continuing role in the research value chain. But in many fields, the financial strength of commercial competitors can only be addressed if societies act collectively across adjacent societies or in partnership with other kinds of scholarly communications stakeholders.

BioOne is one model of how this might be achieved, one that can be replicated in other fields. Conversations are already underway among content providers in geology, for example. BioOne is not the only solution, but it is one of the solutions and an example of the way motivated stakeholders can transform discussion into action. The hope is not just that BioOne succeeds, but that BioOne's success inspires similar innovations in scientific communications across disciplines and fields.

Libraries have already responded with overwhelming enthusiasm and concrete support for BioOne. Many who have backed BioOne point to its goal of ensuring the viability of smaller scientific societies that have been offering good value on their journals for years. For the collaborators, that's a motivating factor. The plight of the small society has an effect on scientific research even at the topmost rungs. If these journals can't make the jump to electronic dissemination, they will ultimately get squeezed out of publishing and perhaps out of existence. When they do make the jump, via projects like BioOne, they will contribute to and advance the scientific process. Libraries will receive reasonably priced access to research for millions of subscribers and researchers will have access to publishing vehicles that embody their own ethos toward science.

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HEATHER JOSEPH APPOINTED PRESIDENT AND CHIEF OPERATING OFFICER OF BIOONE

On 1 August 2000, Heather Joseph joined BioOne as President and Chief Operating Officer. After beginning her publishing career working for a newspaper in Washington, D.C., Ms. Joseph has spent the last 10 years in scholarly publishing. In her work for both nonprofit and commercial publishers, she has concentrated on the challenge of bringing together scholarly traditions and emerging technologies.

From her role with the American Astronomical Society where she helped create one of the first fully electronic journals (*The Electronic Astrophysical Journal Letters*, 1995) to her most recent work creating a system to peer review and publish multimedia content in the journal *Molecular Biology of the Cell*, Ms. Joseph has thoroughly enjoyed being a part of collaborations among the publishing, technical, and library communities.

She is particularly interested in collaborations that challenge traditional publishing boundaries, and in exploring their potential economic effects. She has worked closely with the staff at the NLM/NCBI, helping to launch the PubMed Central initiative by becoming the first journal publisher to commit full content to the project.

Ms. Joseph is also an active participant in several professional societies, currently serving as a member of the Board of Directors for the Society for Scholarly Publishing, and as a member of the Program Committee for the upcoming meeting of the Council of Science Editors.

SPARC NOTES

by Alison Buckholtz, SPARC Assistant Director, Communications

IEEE & SPARC Collaborate

SPARC has announced its collaboration with the Institute of Electrical and Electronics Engineers, Inc., (IEEE), the 350,000-member nonprofit, technical professional association, to produce the *IEEE Sensors Journal*, a low-cost, high-quality alternative to *Sensors and Actuators, A and B*.

The *IEEE Sensors Journal*, a print and electronic journal to be published bimonthly beginning in June 2001, will be a fully refereed publication with an online peer review system and electronic submission of papers. The *IEEE Sensors Journal* will cost $395 per year for nonmember institutions and $19 per year for individual IEEE members. The competing journal costs approximately $4,600.

Professor Vladimir Lumelsky of the University of Wisconsin, who is currently on sabbatical at the National Science Foundation, recently was named Editor-in-Chief of *IEEE Sensors Journal*.

"IEEE is a high-quality, nonprofit publisher that's well prepared to bring a credible alternative to market," said Rick Johnson, SPARC Enterprise Director. "Moreover, they have an impressive record of publishing economical, high-impact journals. Their average institutional subscription price is about half that of all engineering titles."

Through its members, the IEEE is a leading authority in technical areas ranging from computer engineering, biomedical technology, and telecommunications, to electric power, aerospace, and consumer electronics, among others.

Geological Society of America, Columbia, & SPARC Explore New Services for Geoscience Journals

The Geological Society of America (GSA), which publishes two of the world's leading geoscience journals, is exploring a collaboration with the Electronic Publishing Initiative at Columbia (EPIC) and SPARC to launch a new electronic aggregation of major geoscience journals. The proposed collaboration would offer full texts of earth science society journals to library subscribers on the Web on a shared platform in order to reduce development costs, expand readership and functionality, and ensure competitive, library-friendly prices.

The journals would be hosted and distributed on the

Internet as part of Columbia Earthscape, an award-winning web resource for the earth sciences. Earthscape has been widely hailed for its innovative integration of the research, teaching, and public policy dimensions of earth sciences. GSA's journals and those of other earth science societies would be available as a section of Earthscape, with the content of the journals fully searchable as part of the larger publication. Columbia Earthscape was developed by EPIC, a joint program of the Columbia University Press, Columbia University Libraries, and Columbia University Computing Center.

SPARC Membership Update

SPARC welcomes several new members: Case Western Reserve University, Mount Holyoke College, Loyola University Chicago, University of Technology (Sydney, Australia), Katholieke Universiteit Leuven (Belgium), Australian National University, and Haverford College. CONZUL—the Committee of New Zealand University Librarians—is SPARC's newest affiliate. CONZUL members include University of Auckland, Auckland University of Technology, University of Waikato, Massey University, Victoria University of Wellington, University of Canterbury, Lincoln University, and University of Otago.

RESEARCH LIBRARIES IN COLORADO "CREATE CHANGE"

by Jim Williams, Dean of Libraries, University of Colorado, and Camila Alire, Dean of Libraries, Colorado State University

With one research library in Colorado actively engaged in the process of re-creating its library after a devastating flood, and the other anticipating several lean fiscal years, the library deans at Colorado State University (CSU) and the University of Colorado–Boulder (CU) made the decision to broaden the conversation on their respective campuses regarding the general topic of the future of scholarly communication. They held a planning meeting with their Chief Academic Officers (CAOs) with one objective in mind: to plan a joint CSU/CU "Symposium on the Future of Scholarly Communication in the Digital Age," to be sponsored by the CAOs, the Library Deans, and the Faculty Governance organizations on each campus. The planning phases and outcomes are summarized here so that other institutions can create similar sessions, if desired, on their campuses or within their state educational systems.

The objective of our proposed symposium was to inform, raise consciousness on the issues, and inspire advocacy for change among key administrative and faculty players on campus. The business plan for the symposium was (i) that all costs would be equally shared, (ii) that the speakers would be nationally recognized in academe for their contributions on the topic, (iii) that there would be no registration fee, (iv) that the event would be held at a neutral (off-campus) site, and (v) that the symposium would be invitational. The library deans strategically suggested that the invitees to the symposium should be academic officers, e.g., deans of schools/colleges, campus editors, representatives from faculty personnel committees, and representatives from faculty governance. And, that the only librarians in attendance would be the library deans and their administrative cabinet members. The CAOs agreed with this proposal, including their agreement that the invitation to the symposium should come from them.

On 28 February 2000 over 70 invitees from the two campuses convened at a conference center located between Boulder and Fort Collins, Colorado, to participate in the symposium. A panel discussion on "Eliminating the Scholarly Communication Crisis: A Review of the Pew Higher Education Roundtable Report 'To Publish and Perish'" was facilitated by Dr. David Shulenberger, Provost, University of Kansas, and moderated by Todd Gleeson, Associate Vice Chancellor for Faculty Affairs, University of Colorado–Boulder. Panelists for the discussion were: Frank Beer, Faculty Senate Chair, University of Colorado–Boulder; Loren Crabtree, Provost, Colorado State University; Phil DiStefano, Vice Chancellor for Academic Affairs, University of Colorado–Boulder; and Paul Kugrens, Faculty Council Chair, Colorado State University. In addition to the panel discussion, two presentations were given: "Opportunities for Scholarly Communications: Crafting New Models" by Richard Johnson, SPARC Executive Director, and "Crisis in Academic Publishing: We are the Solution" by Dr. Michael Rosenzweig, Founder & Editor of *Evolutionary Ecology Research*.

This stimulating day of sharing and discovery ended with agreement that (i) the symposium should be repeated at each campus in the form of a faculty colloquium, (ii) that a set of principles for emerging systems of scholarly communication should be developed by academe, (iii) that the five campus-based initiatives recommended in the Pew Roundtable Report are indeed effective strategies through which to garner institutional commitments to solving the underlying issues in the disjunction between the sociology and economics of scholarly communication, (iv) that the SPARC initiative is a timely and effective model that serves to remind academe that it can create its own set of solutions to the issues at hand, and (v) that Dr. Rosenzweig's exemplary work as founder and editor of a competitive journal in ecological research serves to inspire those who also intend to "create change" in the gift culture of higher education.

STATISTICS AND MEASUREMENT

Martha Kyrillidou, Senior Program Officer

THE ARL "LIBQUAL+" PILOT PROJECT: AN UPDATE

by Colleen Cook, Executive Associate Dean of University Libraries, and Fred Heath, Dean and Director of University Libraries, Texas A&M University

The December 1999 issue of *ARL* reported the launch of a pilot project on client assessment of library service quality using a modified version of the SERVQUAL instrument.[1] Grounded in the Gap Theory of Service Quality, the SERVQUAL survey instrument was developed for the for-profit sector in the 1980s by the marketing research group of Parasuraman, Zeithaml, and Berry.[2] The well-tested instrument—a standard in the business world—has since been applied in a number of other disciplines, and has been the focus of study in the library environment as well.[3]

The ARL initiative traces its origins to the New Measures retreat held in early 1999, where a series of potential new metrics for research libraries were identified. At the October 1999 annual ARL meeting, the New Measures group considered a pilot project proposal by Texas A&M University based on its six-year experience with the administration of SERVQUAL.[4] Endorsed by the ARL membership, the project initially called for the participation of six to eight libraries in a 24-month undertaking to test the efficacy of the instrument as a tool for identifying best practices in research libraries. The project quickly grew in complexity, with attendant demands upon logistics and research design.

Reflecting the membership's deep commitment to the development of new measures, the call for volunteers was answered by 30 libraries. The Texas A&M design team responded by developing a web-based survey instrument to accommodate large-scale administration, and by working with ARL staff and library administrators to select a diverse group of 12 participating libraries. The broadest possible range of ARL typologies was targeted: large public universities and private institutions were desired, as were those with urban missions and land-grant and statewide responsibilities. It was important to ensure the participation of all regions of the United States as well as Canada. Choosing the first group of participants was one of the more difficult early steps. But, with the recognition that at least one more pilot phase would be required before settling on a final design, a number of institutions agreed to wait for the second iteration, and the following pilot participants were named:

University of Arizona
University of California, Santa Barbara
University of Connecticut
University of Houston
University of Kansas
Michigan State University
University of Minnesota
University of Pennsylvania
University of Pittsburgh
Virginia Tech
University of Washington
York University

The ARL endorsement called for an ambitious timeline, with the goal of completing the first iteration of the pilot in May 2000 and a first reporting-out to the participants at the July 2000 American Library Association (ALA) Annual Conference in Chicago. As a result, a number of development and design elements were pressed forward simultaneously on a very fast track. The pace of development was aided by Texas A&M's support for the preponderance of the costs. Additionally, each of the participants agreed to contribute $2,000 toward the costs upon the receipt of deliverables. The Texas A&M team included the Cognition and Instructional Technologies Laboratory (CITL) for assistance with instrument development and web construction, and qualitative and quantitative evaluators to oversee the rigor of design.

The project liaisons and library directors from the participating institutions were invited to a planning conference during the January 2000 ALA Midwinter Meeting in San Antonio, where the general design and timeline for the project were discussed. CITL representatives spoke about aspects of the web design. The external quantitative evaluator led a discussion of the dimensions of service quality identified by the original SERVQUAL instrument in its decade of administration and compared those to the dimensions recovered by Texas A&M in the library environment over the past six years.

After the Midwinter Meeting, work on survey design began in earnest. In order to promote acceptance and enhance response rate, CITL worked with each institutional liaison to prepare a customized front-end web page for the general survey. At launch, when survey respondents at each university would visit the URL to be provided in an email message from their campus library, participants would be transported to an instrument containing their institutional logo. Completing the logistical requirements for launch was the acquisition of the hardware and software required to administer the survey, capture the data, and analyze the results for a large-scale, web-based survey spanning the continent.

One of the first tasks at hand was to *re-ground* the instrument for the pilot project by visiting the participating institutions and conducting a series of interviews with faculty, graduate students, and undergraduates in order to ascertain their views on what constitutes quality library service, thereby building theory and revising the instrument to test for those results during the survey period. Between January and March 2000, the principal investigators visited many of the pilot institutions, where a total of 60 interviews were conducted and transcribed. While in-depth analysis of the qualitative results continues under the direction of the project's external qualitative evaluator, preliminary results led to a revision of the survey instrument. In addition to the questions contained in the standard SERVQUAL instrument, a battery of other questions was added to test for the potential of two additional dimensions identified during the interviews: ***access to collections*** and ***libraries as place***—a concept transcending the definition of "tangibles" in the original SERVQUAL.

The original SERVQUAL instrument features 22 questions to measure service quality across its five dimensions (tangibles, reliability, responsiveness, assurance, empathy). Testing the additional dimensions required the addition of another 19 test-questions for the pilot phase, adding to the instrument's complexity and completion time. The final version of the survey was then reviewed and approved by human subjects review boards at Texas A&M and the 12 pilot institutions. This "LibQUAL+" protocol is designed expressly for the research library community. As the instrument is refined over time, few of the original SERVQUAL questions may remain, but the tested methodology will be retained.

The next issue involved the development of the sampling frame for the project. Web-based surveys are frequently criticized for sample bias problems that can arise when a large proportion of the targeted population is excluded for one reason or another from participating. Few such problems are encountered in the research university environment, where email addresses are ubiquitous and access to the Internet via personal computers is commonplace. While the design team continues to evaluate the results for representativeness and questions of non-response bias, the designers and participants felt that of all communities in North America, the research university community was the one best suited at this time to respond to a web-based survey.

But what of the sampling proportionality issues? A sample reflecting the university community proportionally would result in a predominately undergraduate response. Because of the university library mission in support of graduate study and research, the design team opted for a sample frame that would produce equal responses from the three user groups: faculty, graduate students, and undergraduates. Additionally, because service quality theory is based on the assumption that employees are intimately familiar with the desires of clients, library staff were also asked to answer the survey. Each campus liaison was instructed to draw from campus email pools random samples of 900 undergraduates, 600 graduate students, and 600 faculty. A single exception was permitted where the faculty population approximated the size of the targeted sample; there the entire population was substituted. All library staff at each pilot institution were encouraged to answer the survey.

Overall, the design construct required that Texas A&M develop a system capable of capturing 20,000 survey responses in a very short period of time. Members of the design team from CITL at Texas A&M configured the servers and worked with the campus liaisons to prepare their web pages and develop their samples. The survey instrument itself was written in Cold Fusion, a server-side technology that allows dynamic generation of web content from a database. Cold Fusion works with several web servers, and can access several different databases (including Oracle, Sybase, Microsoft SQL, and Access) so that future applications of the system are transportable.

With the pieces in place, administration of the survey began. The instrument had been beta-tested at Texas A&M Medical Sciences Library in early March 2000. Because of differences in academic calendar year and by prior agreement, York University preceded the late April mass launch of the survey by a few weeks. For the same reasons, the University of Washington delayed by a similar period.

By early June, the survey had run to completion on all campuses, the data were captured and automatically downloaded into SPSS. Most of the design goals were achieved. Some 5,000 responses from the 12 different campuses were received. Verifying the readiness of the academic community to respond to web-based surveys, representative responses were received across gender and age groups. The survey achieved equal returns from men and women, and obtained equal sets of respondents from its three primary target groups of faculty, graduate students, and undergraduates. Large sets of data were obtained across the various disciplines. Over the summer as time permits, analysis will be made on differences in perceptions of service quality by different disciplines and user groups.

Much work remains ahead. In the reporting-out meeting held for participants during ALA in July, each of the pilot libraries was provided with mean scores for each of the questions as well as each dimension the instrument succeeds in defining. Each participant also received the aggregate mean scores for each question and each dimension and other descriptive statistics. One of the many important milestones of the July session was to assess the experiences of the pilot libraries in the administration of the survey on their home campuses. The design team has received the comments respondents delivered to institutional liaisons regarding the survey on their home campuses. Those comments are being categorized and subjected to content analysis. Significant issues range from the quality of the survey design, length and ease of completion, browser and operating system limitations, privacy concerns, and the like. Accommodation of these concerns are key to strengthening the survey instrument through its subsequent design phases.

The initial administration of the survey produced interesting data, revealing deficits in such areas as physical space, reliability issues, and access to collections. Each of the institutions will be taking steps to address priority issues and evaluate the results they received in both the local context and for that of other institutions. Further, the pilot study revealed overarching strategic concerns with access to collections in the ARL cohort as a whole. These data give rise to rich possibilities for collaborative and consortial action across institutions in North America to improve access to collections.

A preliminary review of the findings will be presented at the 66th IFLA General Conference, Section on Statistics, Jerusalem, August 2000. A more comprehensive look at the results will be reported at an ARL international conference on the "New Culture of Assessment in Academic Libraries: Measuring Service Quality," in Washington, D.C., 20–21 October 2000.

In the academic year 2000–2001, the instrument will be further refined. From among the respondents of the first phase, some may be tagged for a longitudinal follow-up study. In this manner, it will be possible to test the findings qualitatively by going back to some of the respondents in online focus groups. A number of libraries have already expressed interest in being included in the second pilot in the spring 2001. It is expected that the number of participants will be doubled in the second phase, and other types of libraries may be included.

The academic year 2001–2002 will mark the emergence of a mature instrument and, if external funding permits, its movement from the design oversight of Texas A&M University to widespread operational administration by ARL.

The strength of the project is the rigor of its design and the robustness of the statistical analysis to which the results are being subjected. Close peer scrutiny of the findings is assured through broad dissemination of the results.[5] The model recognizes the preeminence of local findings and surfaces best practices across institutions. If successful, the pilot project will be scaled to a national undertaking, accommodating other related research. The advantages of an assessment tool, well grounded in theory and rigorously administered, holds promise to finally answer the calls for greater accountability and responsiveness to user needs in college and university libraries.

For more information on the "LibQUAL+" pilot project, see <http://www.arl.org/stats/newmeas/libqualplus.html>.

MEASURING SERVICE QUALITY…

An ARL Symposium

20–21 October 2000
Jurys Hotel, Washington, D.C.

This symposium featuring international experts in service quality measurement will provide an arena for examining the theoretical frameworks for, and implications of, measuring service quality in libraries. For more information, see <http://www.arl.org/stats/newmeas/msqsymp.html>.

…AND…

An ARL OLMS Online Lyceum Collaborative Learning Event

23 October–1 December 2000

This interactive online course will cover the theory and impact of measuring library service quality as well as methods to assess and improve service. For more information, see <http://www.arl.org/training/quality.html>.

[1] Colleen Cook and Fred Heath, "SERVQUAL and the Quest for New Measures," *ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC* no. 207 (Dec. 1999): 12–13.

[2] A. Parasuraman, V.A. Zeithaml, and L.L. Berry, "A Conceptual Model of Service Quality and Its Implications for Future Research," *Journal of Marketing* 70, no. 3 (Fall 1985): 201–230.

[3] See, for example, Danuta Ann Nitecki, "Assessment of Service Quality in Academic Libraries: Focus on the Applicability of the SERVQUAL," in *Proceedings of the Second Northumbria International Conference on Performance Measurement in Libraries and Information Services, Longhirst Hall, Northumberland, 7–11 September 1997* (Newcastle-upon-Tyne, England:University of Northumbria at Newcastle, 1998), 181–196.

[4] Colleen Cook, Vicki Coleman, and Fred Heath, "SERVQUAL: A Client-Based Approach to Developing Performance Indicators" in *Proceedings of the Third Northumbria International Conference on Performance Measurement in Libraries and Information Services, Longhirst Hall, Northumberland, 27–31 August 1999* (Newcastle-upon-Tyne, England: Information North, 2000), 211–218.

[5] See, for example, Colleen Cook and Bruce Thompson (in press), "Higher-Order Factor Analytic Perspectives on Users' Perceptions of Library Service Quality," *Library and Information Science Research*; Colleen Cook and Bruce Thompson (in press), "Reliability and Validity of SERVQUAL Scores Used to Evaluate Perceptions of Library Service Quality," *Journal of Academic Librarianship*.

DIVERSITY

DeEtta Jones, Director of Diversity Initiatives

MILLENNIAL LEADERSHIP AND CAREER DEVELOPMENT PROGRAM COMES TO A SUCCESSFUL CLOSE

Taking affirmative measures to create diverse representation at all organizational levels often means committing not only to recruiting and retaining diverse staff, but to supporting developmental activities that enhance career opportunities. ARL strives to develop leadership skills in librarians from underrepresented racial and ethnic groups, enhancing their opportunities to compete for positions in top administrative levels of the research library community. To meet this goal, the ARL Leadership and Career Development (LCD) Program was launched in 1997. The success of the inaugural experience lead ARL member leaders to recognize it as a priority activity and add it to the Association's ongoing programs. The second program offering—the Millennial Program—was offered in 1999–2000. Millennial LCD Program participants, mentors, colleagues, and ARL faculty celebrated the successful completion of this year's experience at a Closing Ceremony held in conjunction with the American Library Association Annual Conference in Chicago. Program participants briefly reflected on their experiences and learning gained in each of the Program components: a mentoring relationship, a research project, and two five-day institutes.

Millennial LCD Program Participants

From left to right, front row: Stephanie Sterling Brasley, Deborah Abston, Karen M. Letarte, DeEtta Jones (ARL), Deborah R. Hollis, Jeannie P. Miller, Corey Murata, Judith A. Valdez; back row: Trish Rosseel (ARL), Bob Diaz, Dajin Sun, Darlene Nichols, Karen E. Downing, Jerome UpChurch Conley, Jian Liu, Shelley Phipps (Arizona/ARL), Dawn Ventress Kight, Genette McLaurin, Haipeng Li. Absent from photo: Xiaofei Chen

The Leadership and Career Development Program is developing a critical mass of minority librarians with the necessary skills for upward mobility in the academic and research library community. The LCD Program content is multi-faceted, and designed to meet rigorous educational standards. It combines theory—presented by key leaders in the library and information science profession—with experiential learning opportunities, allowing for exploration of critical issues facing leaders in the research library and higher education communities. With the support of ARL member leaders as mentors, and encouragement from colleagues and administrators at their home institutions, 16 librarians of color completed the Millennial LCD Program.

ARL congratulates the Millennial LCD Program participants and extends heartfelt thanks to the committed group of mentors.

PARTICIPANT: **Deborah Abston**
Reference Librarian/Subject Specialist
Arizona State University
MENTOR: **Carla Stoffle**
University of Arizona

PARTICIPANT: **Stephanie Sterling Brasley**
Reference/Instruction Librarian/
Outreach Coordinator
University of California–Los Angeles
MENTOR: **Jennifer A. Younger**
University of Notre Dame

PARTICIPANT: **Xiaofei Chen**
Chinese Bibliographer and Reference Librarian
University of Michigan
MENTOR: **Jack Siggins**
George Washington University

PARTICIPANT: **Jerome UpChurch Conley**
Assistant to the Dean and University Librarian
Miami University
MENTOR: **James G. Neal**
Johns Hopkins University

PARTICIPANT: **Joseph R. Diaz**
Associate Librarian, Fine Arts/
Humanities
University of Arizona
MENTOR: **Kenneth Frazier**
University of Wisconsin–Madison

PARTICIPANT: **Karen E. Downing**
Assistant to the Director for Cultural Diversity and Staff Development Officer
University of Michigan
MENTOR: **Emily R. Mobley**
Purdue University

PARTICIPANT: **Deborah R. Hollis**
Acting Head, Special Collections
University of Colorado–Boulder
MENTOR: **Joan Giesecke**
University of Nebraska–Lincoln

PARTICIPANT: **Dawn Ventress Kight**
Manager, Systems & Technology
Southern University–Baton Rouge
MENTOR: **Pamela André**
National Agricultural Library

PARTICIPANT: **Karen M. Letarte**
Assistant Professor and Cataloging Librarian
Southwest Missouri State University
MENTOR: **Nancy Baker**
University of Iowa

PARTICIPANT: **Haipeng Li**
Reference Librarian/
Bibliographic Instruction Coordinator
Oberlin College Library
Mentor: **Scott Bennett**
Yale University

PARTICIPANT: **Jian Liu**
Associate Reference Librarian
Indiana University
MENTOR: **Joseph J. Branin**
Ohio State University

PARTICIPANT: **Genette McLaurin**
Assistant Chief Librarian
New York Public Library
MENTOR: **Meredith Butler**
State University of New York at Albany

PARTICIPANT: **Jeannie P. Miller**
Assoc. Professor and Head,
Science Engineering Services
Texas A&M University
MENTOR: **Karin Trainer**
Princeton University

PARTICIPANT: **Corey Murata**
Business Computer-based Services Librarian
University of Washington
MENTOR: **William A. Gosling**
University of Michigan

PARTICIPANT: **Darlene Nichols**
Education & Psychology Librarian
University of Michigan
MENTOR: **Paula T. Kaufman**
University of Illinois at Urbana-Champaign

PARTICIPANT: **Dajin Sun**
Assistant Catalog Management Librarian
Yale University
MENTOR: **Paul Kobulnicky**
University of Connecticut

PARTICIPANT: **Judith A. Valdez**
Head Reference Services
University of Colorado–Denver
MENTOR: **James F. Williams II**
University of Colorado–Boulder

The Leadership and Career Development Program will be offered again in 2001–2002. Complete Program information and application materials will be available in February 2001 on the ARL website at <http://www.arl.org/diversity/lcdp/>.

"DIGITAL REALITY II: PRESERVING OUR ELECTRONIC HERITAGE"

by Kaylyn Hipps, Assistant Editor of ARL

On 5 June 2000, I attended—along with 350 others—the "Digital Reality II: Preserving Our Electronic Heritage" conference cosponsored by the NELINET Preservation Advisory Committee, John F. Kennedy Library, and Northeast Document Conservation Center (NEDCC) and hosted by the Kennedy Library in Boston. The conference brought together five experts in digital technology and preservation to present their views of the future of the World Wide Web and libraries and archives, and how we might best preserve the growing amounts of digital information being produced.

After opening remarks by Megan Desnoyers of the Kennedy Library, Ann Russell of NEDCC, and Arnold Hirshon of NELINET, the morning was dedicated to speculation about the future of the Web and its impact on libraries and archives. Tim Berners-Lee, of the Massachusetts Institute of Technology and World Wide Web Consortium (W3) and inventor of the Web, noted that the Web has made more apparent to more people the necessity—and difficulty—of preserving our digital information. When asked what the greatest problem with the Web is, many people cite the frequency with which they encounter "Error 404: URL not found." Berners-Lee observed that companies do not change their phone numbers or product I.D. numbers without building in a referral to the new number, but they often change URLs and fail to provide referrals because websites are difficult to manage. He would like to see permanent domain names and policies enacted to encourage persistent URLs; he believes that librarians should lead the charge for persistent URLs because that will require the establishment of social standards related to information—librarians' territory.

Walt Crawford of the Research Libraries Group presented three different scenarios for the future of the Web: "the Web as life," "the Web as CB radio," and "the Web in complexity." "The Web as life" is the scenario where everything is digital, where people obtain all they need (products, information, entertainment) via the Web and live in isolation from one another. Crawford sees this as highly improbable. He believes that digital resources (and experiences) will complement, not replace, analog ones. The vision of "the Web as CB radio" sees use of the Web moving from general to specific. Crawford believes this future is as unlikely as "the Web as life" although he does believe that the Web will lose some of its general appeal as the hype surrounding it dies down. The most probable future, in Crawford's opinion, is that the Web will become more complex as web-based tools for creating services and publications evolve. The Web will not replace buildings but will be used to develop new resources. Libraries will continue to encompass resources, services, and place.

In the afternoon, the conference sharpened its focus on the issue of digital preservation. Paul Conway of Yale University Library set the stage with a description of the context and issues involved in discussing digital preservation. He asked, "What is the place of preservation theory and practice in a world dominated by information created, shared, sold, and used in digital form?" In the past 10 years, the library community's perspective on digital preservation has been transformed. Conway observed that best practices for preserving digital text and grayscale images are emerging and information architectures have been implemented. He sees digital preservation as "the creation of digital products worth maintaining over time," and emphasized that use must drive preservation choices and technology. This philosophy challenges the foundation of the research library collection built in anticipation of future use, but Conway believes use validates the creation of these products.

Fynnette Eaton, of the Smithsonian Institution Archives and formerly of the National Archives and Records Administration (NARA), presented her experience with the preservation strategy of migration—the transfer of digital data from one technological configuration to another to ensure readability without substantive loss of content, structure, or context. First, Eaton described the 30-year evolution of the NARA procedures for creating preservation copies of electronic records, culminating with the modifications to their Archival Preservation System (APS) required by the task of creating preservation copies of the email backup tapes from the Reagan and Bush White Houses. Eaton also outlined three current research projects focusing on migration of electronic records:

- the InterPARES (International Research on Permanent Authentic Records) project <http://www.interpares.org/>, whose goal is to develop the essential knowledge for preserving electronic records and formulate model policies, strategies, and standards that will ensure preservation;
- the Collection-Based Persistent Digital Archives project at the San Diego Supercomputer Center <http://www.sdsc.edu/NARA/>, which is testing the feasibility of preserving various types of digital information over time by integrating archival storage technology from the supercomputing community, data-grid technology from the computer science community, information models from the digital library community, and preservation models from the archival community; and

- the Open Archival Information System (OAIS) conceptual model for archival systems dedicated to preserving and maintaining access to digital information over time <http://ssdoo.gsfc.nasa.gov/nost/isoas/>, which is a draft NISO standard initiated by NASA's Consultative Committee for Space Data Systems and developed in open forums.

Eaton concluded that there is no single answer to the problem of preserving digital information but we are beginning to ask the right questions.

Jeff Rothenberg of the Rand Corporation argued the case for preserving digital documents via emulation. Digital documents depend on software (and, therefore, also on an operating system and hardware) for interpretation. Rothenberg believes it is not sufficient to save the bits to preserve a digital document; we must save the interpreter as well. (He nicely illustrated this point with, among other examples, text from *Winnie the Pooh* whose format conveys meaning that is lost when the text is stripped of formatting.) Rothenberg argued that standards can keep documents readable and migration can be used when standards become obsolete, but migration is expensive and labor-intensive. Saving the original software is a straightforward way to maintain access to documents, but running obsolete software requires obsolete hardware or emulation of that hardware. Rothenberg argues that emulating hardware is cost effective because, once a platform has been emulated, that emulator can be used to run any software written for that platform. He admits there are problems with emulation: future users will need to know how to run obsolete software, so we may need use-copies for non-scholarly access to documents; we may have to emulate more than hardware; and emulation requires an emulator specification and environment per platform, which is an ambitious goal. Rothenberg believes emulation's strengths outweigh its weaknesses; he also believes emulation is a superior strategy to migration. Migration requires repeated conversion as technology changes, which requires understanding of individual documents, while emulation can be performed and paid for once and then it is accomplished for all documents created on that platform.

The day closed with Jan Merrill-Oldham of Harvard University Library moderating a lively panel discussion involving Crawford, Conway, Eaton, and Rothenberg as well as heavy audience participation. For more information about the conference, including speakers' biographies and presentations, see <http://www.nelinet.net/conf/pres/pres00/digital.htm>.

"TO PRESERVE AND PROTECT: THE STRATEGIC STEWARDSHIP OF CULTURAL RESOURCES"

by Doris A. Hamburg, Head of Preventive Conservation, Library of Congress

As custodians of library collections, our responsibility to provide access for future and present generations lies at the core of our challenge to preserve and protect the collections. Traditionally, the security and preservation fields have been viewed quite separately; these disciplines, however, share common issues and concerns in developing programs to safeguard cultural assets. The intertwined nature of accountability, program effectiveness, and funding plays an ever-increasing role in managing security and preservation efforts. The upcoming Library of Congress Bicentennial symposium, **"To Preserve and Protect: The Strategic Stewardship of Cultural Resources,"** will explore innovative approaches for addressing these critical concerns. Sponsored by the Library of Congress in affiliation with ARL, the goal of the symposium is to engage directors and administrators in libraries, museums, and archives in a dialogue on key issues of preserving and securing collections and to provide the opportunity to explore concerns that overlap and lend themselves to complementary solutions.

Symposium sessions will explore such topics as coping with theft, deterioration, and bad press; keeping the bits and bytes readable; how much security or preservation is too much or too little; enhancing relationships between cultural institutions and funders; and envisioning new directions in cooperative efforts.

Speakers will include Nancy Cline, Harvard University; Werner Gundersheimer, Folger Shakespeare Library; Winston Tabb, Library of Congress; Jeff Field, National Endowment for the Humanities; Lynne Chaffinch, Federal Bureau of Investigation; James Reilly, Image Permanence Institute; Clifford Lynch, Coalition for Networked Information; Maxwell Anderson, Whitney Museum of American Art; Deanna Marcum, Council on Library and Information Resources, Jan Merrill-Oldham, Harvard University; Jim Neal, Johns Hopkins University; Nancy Davenport, Library of Congress; Camila Alire, Colorado State University; and Nancy Gwinn, Smithsonian Institution.

The symposium will be held on 30–31 October 2000 in Washington, D.C. The $225 registration fee includes lunches on both days and the evening reception in the Great Hall of the Library of Congress. Due to space constraints, attendance will be limited. To register for the symposium, and for more information, see the Library of Congress website at <http://www.loc.gov/bicentennial/symposia_preserve.html>. Additional information is also available from Ms. Jane Caulton, Library of Congress, 202-707-7194 or <jcau@loc.gov>.

ARL ACTIVITIES

Lee Anne George, Program Planning Officer

ARL BUILDS SCHOLARLY COMMUNITY

ARL's 136th Membership Meeting was held on 17–19 May 2000, in Baltimore, Maryland, and was hosted by the Johns Hopkins University Library. ARL President Ken Frazier, University of Wisconsin, chaired the program on "Building Scholarly Communities." One hundred twelve member libraries were represented at the meeting.

The speakers covered a range of opportunities for building scholarly communities. The keynote speaker, Stan Gryskiewicz from the Center for Creative Development, set the stage by explaining how to monitor and exploit the periphery of the external environment in order to direct continuous renewal in an organization. Professors Neil Fraistat, University of Maryland, and David Nord, University of Wisconsin, described how scholars are building communities around websites and journals. Jan Fullerton, National Library of Australia; Roch Carrier, National Library of Canada; and Winston Tabb, Library of Congress; reported on initiatives within and among national libraries around the world to build communities. In addition, attendees had an opportunity to hear a number of briefings and discuss emerging issues that affect the Association's agenda. Many of the presentations are available on the ARL web page <http://www.arl.org/arl/proceedings/136/index.html>.

Member representatives also participated in a series of facilitated discussions including:

- a discussion of the Higher Education Outcomes Research Review. This is an effort to involve research libraries in campus assessment activities demonstrating the value and contributions of the library to the academic learning community. Dr. Kenneth Smith, Distinguished Service Professor of Economics at the University of Arizona, prepared a white paper to help focus the luncheon discussion.
- a discussion of the Keystone principles led by Carla Stoffle, University of Arizona. The Keystone principles were published in *ARL* 207 (Dec. 1999). They are also available at <http://www.arl.org/training/keystone.html>.
- a discussion of a white paper entitled "The Case for Creating a Scholars Portal to the Web," prepared by Jerry Campbell, University of Southern California. This paper is featured in this issue of *ARL*.
- a discussion of the outcomes of the Conference on Scholarly Communication. This was an invitational meeting that took place on 2–4 March in Tempe, Arizona. One outcome was a statement of principles for the emerging system of scholarly communication. The statement is available at <http://www.arl.org/scomm/tempe.html>.

ARL LEADERSHIP AND CAREER DEVELOPMENT PROGRAM IS RECIPIENT OF IMLS NATIONAL LEADERSHIP GRANT

The Institute of Museum and Library Services (IMLS) awarded a FY 2000 National Leadership Grant in Education and Training to ARL's Leadership and Career Development Program. This one-year project will use the Online Lyceum developed by ARL as a vehicle for delivering distance education of ARL's new Leadership and Career Development Program curriculum, which is designed to help minority librarians compete more effectively for leadership positions in research libraries.

HONORS

William Gray Potter, University Librarian at the University of Georgia, is the recipient of the 2000 LITA/Gaylord Award for Achievement in Library and Information Technology. Sponsored by Gaylord Information Systems and the Library and Information Technology Association (LITA), a division of the American Library Association, the award recognizes outstanding achievement in the creative use of information technology for improving or enhancing library services. Potter received a $1,000 stipend donated by Gaylord and a citation of merit at a ceremony and reception during the LITA President's Program on 10 July at the ALA Annual Conference in Chicago.

Marianne Scott—recently retired as Canada's National Librarian—is this year's recipient of the Canadian Library Association's (CLA) Outstanding Service to Librarianship Award. This award, the highest honor granted by CLA, is given for distinguished service in the field of Canadian librarianship. The award was presented at the annual conference of the CLA held 21–25 June.

TRANSITIONS

Alabama: Charles B. Osburn, Dean of Libraries, announced his resignation effective August 2001.

California–Berkeley: Thomas Leonard, Associate Dean of Journalism, was appointed Interim University Librarian effective 1 September.

Oregon: George Shipman retired from his position as University Librarian 30 June. Deborah Carver, Associate University Librarian for Public Services and Collections, was appointed Interim University Librarian effective July 2000.

Southern Illinois University–Carbondale: Jim Fox, recently retired Associate Dean for Public and

Collection Development Services, was appointed Interim Dean of Library Affairs effective 1 July.

SUNY Stony Brook: Chris Filstrup, currently Associate Director for Collection Management at North Carolina State University, was appointed Director and Dean of Libraries effective September 2000.

Tennessee: Barbara I. Dewey will become Dean of Libraries 21 August.

Washington State: Effective 19 June, the Interim Director of Libraries is Mary Doyle, who will continue to serve as Director of Information Technology.

OTHER TRANSITIONS

Association of American Publishers (AAP): Carol Risher, Vice President for Copyright and New Technology, resigned effective 13 June to co-found a new technology company.

BioOne: Heather Joseph has been appointed President and Chief Operating Officer effective 1 August.

Canadian Library Association: Margaret Law, Associate Director of University of Alberta Libraries-Edmonton, was elected President for 2001–2002. Law will serve as Vice-President/President-Elect for 2000–2001, assuming the presidency in June 2001.

Council of Independent Colleges (CIC): The Board of Directors named Richard Ekman, currently Vice-President for Programs of the Atlantic Philanthropic Service Company, as CIC's new President effective mid-September. Dr. Ekman succeeds Dr. Allen Splete, who is retiring after 14 years as CIC's leader. From 1991 to 1999, Dr. Ekman served as Secretary of The Andrew W. Mellon Foundation, where, in addition to his overall administrative responsibilities, he focused especially on issues in higher education, technology, libraries, area studies, and faculty development. He earlier served as Director of the Division of Education Programs and of the Division of Research Programs at the National Endowment for the Humanities.

Council on Library and Information Resources (CLIR): Anne Kenney, Cornell University's Associate Director of the Department of Preservation and Conservation, has been appointed to a part-time position as CLIR Program Director effective 1 September. Ms. Kenney will be based in Ithaca and divide her time between work on initiatives at Cornell and at CLIR.

J. Paul Getty Museum and Getty Trust: Deborah Gibbon, Deputy Director and Chief Curator of the J. Paul Getty Museum, will assume the position of Museum Director and Vice President of the Getty Trust effective 1 October. John Walsh, who currently holds those positions, will retire on 30 September.

National Information Standards Organization: The Board of Directors has three newly elected members for the 2000–2003 term, beginning 1 July: Carl Grant, President of Ex Libris (USA), Inc.; Steven Puglia, Preservation and Imaging Specialist at the National Archives and Records Administration; and Albert Simmonds, Vice President and Director of Business Development at Openly Informatics, Inc.

Special Libraries Association: Executive Director David R. Bender announced his retirement effective 31 July 2001.

ARL AND CNI STAFF CHANGES

Kathryn Deiss, OLMS Program Manager, announced her resignation effective 18 September to accept a position as Director of Education and Training for the Chicago Library System. Kathryn joined OLMS in May 1995 as a Program Officer for Training and took on her role as Program Manager in August 1998. In her five years with ARL, she has made continuous and constant contributions across many of ARL's programs and has been a prolific author for the *ARL Bimonthly Report*.

Trish Rosseel, OLMS Program Officer for Distance Learning and creator of the ARL OLMS Online Lyceum, announced her resignation effective 1 September to begin a new position as Information Literacy Librarian in the University of British Columbia Library's Humanities and Social Sciences Division. On 5 September, **Dawn Kight** begins a one-year appointment as OLMS Program Officer for Distance Learning. Dawn is currently Manager of Systems and Technology for the John B. Cade Library at Southern University in Baton Rouge, Louisiana, and an ARL Visiting Program Officer.

Craig Summerhill, CNI Systems Coordinator and Program Officer, announced his resignation effective 22 August. Craig has been chiefly responsible for the development and maintenance of computing platforms and the networking environment for CNI since 1991.

Claire Wolan, OLMS Program Assistant since February 1999, announced her resignation effective 25 August to pursue a Psy.D. in clinical psychology at Widener University.

In recognition of their expanding responsibilities, two staff members were promoted effective 1 July: **Prudence Adler**, Associate Executive Director, and **Pat Kent**, Accounting Coordinator.

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ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036.
202-296-2296 FAX 202-872-0884
<http://www.arl.org/newsltr/>

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Executive Director: Duane E. Webster
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Assistant Editor: Kaylyn Hipps
Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year.

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ARL CALENDAR 2000–2001

2000

September 25–October 13	Coaching for Performance *Online Lyceum*
October 4–6	Leading Change Institute *Washington, DC*
October 10–13	EDUCAUSE 2000 *Nashville, TN*
October 16–November 24	Training Skills Online: Facilitating Effective Learning *Online Lyceum*
October 17–20	**ARL Board and Membership Meeting** *Washington, DC*
October 20–21	Measuring Service Quality *Washington, DC*
October 23–26	Library Management Skills Institute II: The Management Process *Atlanta, GA*
October 23–December 1	Measuring Library Service Quality *Online Lyceum*
October 30–31	To Preserve & Protect: Strategic Stewardship of Cultural Resources Library of Congress and ARL *Washington, DC*
November 1–3	Project Management Institute: Getting Things Done or Getting the Outcomes You Want *Seattle, WA*
November 13–15	Library Management Skills Institute I: The Manager *Evanston, IL*
November 16–17	Advanced Workshop on Licensing Electronic Information Resources *Location TBA*
December 4–5	From Data to Action: An ARL Workshop on Strategies to Redesign ILL/DD Services *Washington, DC*
December 7–8	CNI Task Force Meeting *San Antonio, TX*

2001

February 8–9	**ARL Board Meeting** *Washington, DC*
May 23–25 (NOTE NEW DATES!)	**ARL Board and Membership Meeting** *Toronto, Ontario*
July 23–24	**ARL Board Meeting** *Washington, DC*
October 16–19	**ARL Board and Membership Meeting** *Washington, DC*

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ARL

A BIMONTHLY REPORT ON RESEARCH LIBRARY ISSUES AND ACTIONS FROM ARL, CNI, AND SPARC

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ABUNDANCE, ATTENTION, AND ACCESS: OF PORTALS AND CATALOGS[1]

by Sarah E. Thomas, University Librarian, Cornell University Library

The world's information resources are abundant, but time is a scarce commodity. The ideal discovery tool, therefore, is one which consults omnivorously, but which returns a selection of relevant results in rapid sequence. Searchers find what they need promptly without having to wade through a vast assortment of tangentially related, inaccurate, or otherwise deficient data. It costs little to build and operate, and it yields a high degree of user satisfaction because it delivers reliable information in a timely manner with relative ease. Such a tool is still imaginary, although it could become a reality in the near future if librarians organize themselves appropriately and commit the resources to design it.

One precursor of this discovery tool is the library catalog. Over the past century, the catalog has achieved a reputation as a dependable starting point for people seeking particular kinds of information: published information appearing chiefly in books or journals that has undergone a formal review and editing process. Libraries have further filtered these publications through their selection practices, in which collection policies guide the acquisition of texts to meet the needs of a particular community. The titles chosen by bibliographers represent quality because they have been at least twice vetted, once by professional editors and once by library subject specialists. Once acquired, the volumes receive added value through their integration with other related materials held by the institution. Through the cataloging of these chosen items, they gain in significance as trained experts distill their essence into a standard bibliographic description. Subject headings and classification contribute further to the access of these materials. Widespread adoption of the *Anglo-American Cataloguing Rules*, Library of Congress Subject Headings, Library of Congress or Dewey Decimal Classification, and the MARC format has enabled the creation of virtual union catalogs with a number of superior attributes. The catalog yields highly codified citations to quality publications in a predictable and dependable fashion. Names are usually authoritative and consistent. These features instill a strong degree of user confidence in the results of their searches. Libraries enhance this trust by ensuring that the materials cited are readily available for consultation, since titles cataloged are either locally held or obtainable through resource-sharing agreements. Furthermore, the library's commitment to preserve the documents in its custody guarantees enduring access.

Over the past few years, library management systems have matured and now present catalog users with sophisticated online public access capabilities that include web access, improved keyword searching, relevance ranking, ability to limit searches by date or other fields, and reference linking.

The catalog's trustworthiness comes at a price. It depends heavily on human intelligence to apply principles of organization to bibliographic works, and the complex rules needed to exact consistency have proven expensive to apply. Original cataloging can cost $50 to $100 per title. (Of course, so can the answer to a single reference question.) Although libraries have reengineered their processes to take greater advantage of cataloging copy and automated assistance in the creation of bibliographic records, the world's output of publications has outstripped the resources available to control them using traditional cataloging procedures. Compounding the situation, there has been a rise in interest in other formats, such as films, recordings, photographs, manuscripts, maps, and, now, digital objects. At the same time that the aperture of scholarship has been widening, libraries have been diverting resources devoted to cataloging to other functions, as ARL statistics reveal: the percentage of the total professional workforce in ARL libraries employed as catalogers has dropped by 25% from 1990 through 1998.[1]

The declining role of the catalog was highlighted in a *New York Times* article headlined "Choosing Quick Hits Over the Card (sic) Catalog." While conceding that "libraries are organized and easily navigated," the author reports "students prefer diving into the chaotic whirl of the Web to find information."[3] More and more students and faculty turn to the Internet as their first point of contact for information. Even deans at top-ranked universities have confessed that they get satisfactory results from "Ask Jeeves," or that they question the need for physical libraries since they find all the references they require for their writing available online. Over the past five years, there has been a strong trend in many quarters of the university to prefer electronic resources because of the ease and speed of access. More recently, the concept of portal has emerged as a unifying device for the wide variety of data made available on the web. The portal serves as a starting point for searching, and it usually offers an array of associated services such as news, related products, and reference tools, often clustered around a theme or discipline.

> *...libraries will have to reallocate funds presently devoted to describing books and journals to materials that are proportionately underrepresented in today's catalogs, such as films, music, photographs, and digital objects.*

Portals differ from the catalog in a number of significant ways. They provide access to a wide range of materials, much of which would fall in the "unpublished" category. Harvesting of data occurs through the use of algorithmic programs, and there is little human cataloging effort. The largest catalog departments process 250,000 volumes annually, while Google's search engine indexes millions of web pages weekly and claims to hold links to more than a billion URLs. To cope with the effect of large response sets, portals have moved to include relevance ranking. Still it is common to experience duplicates, false drops, and dead ends in many searches conducted with the discovery tools popular on the web. In addition, the free service they provide in locating information is often subsidized through advertising, which sometimes even affects placement in search results. Proprietary information, such as licensed databases to which libraries often subscribe, is inaccessible through most commonly used portals.

Despite these deficiencies, portals offer many compelling features. They yield up-to-the-moment information, and they deliver a vast quantity and rich variety of resources, including full-text, images, and sound. The web's ability to support linking enables the searcher to move with ease from document to document, and to capture material for his own use and facile manipulation. Customization and even personalization of searching and retrieval are other popular characteristics of search engines and portals. Looney and Lyman observe that "portals gather a wide variety of information resources into a single 'one-stop' web page, helping the user to avoid being overwhelmed by 'infoglut' or feeling lost on the Web."[4]

The enthusiasm with which people embrace the web, and the skepticism which many of these same digerati express about traditional libraries, has been sobering for some librarians. Information professionals note the flaws in search engines and in digital "library" content, which is often unstable, of dubious quality and authenticity, and incomplete. Their cautionary observations go unheeded among the hype and the reality of the flexibility of the web and the wealth of resources it encompasses. It is unlikely that the catalog—in its present incarnation—can ever be the tool that provides the principal mode of access to information for students and scholars.

An alternative to both the dot-com portals and the catalog is the scholars portal. A concept developed by a number of library leaders in 1999, the scholars portal, described at length by Jerry Campbell, would promise high-quality content of the type consistent with the support of research and scholarship, and it would incorporate the suite of services, such as reference, familiar to library users.[5] It would build on the collaborative strength of libraries to create a destination for scholars that would convey the traditional values of careful selection, expert organization, skilled retrieval and delivery, interpretation, and endurance that have characterized libraries over the past century.

The scholars portal has not yet come to fruition, but the energy and debate surrounding the proposal are healthy signs of the realization that libraries must transform themselves and create new services in the near future. One area that is ripe for review is the proportion of time dedicated to the cataloging of books and journals. In the past decade and more, catalogers have become increasingly productive, using copy cataloging and automated workstations to lower the cost of cataloging. Library administrators have seized resources previously devoted to cataloging and reallocated them to other, higher priority areas, such as technology development. There is a chronic imbalance between the amount of work to be done and the resources available to do it, however, and in addition to backlogs of printed publications such as books and journals, the level of bibliographic control over sound recordings, photographs, films, and archival materials such as manuscripts remains poor. To this growing population of resources, which is increasingly considered important research territory, we now add endlessly proliferating electronic files. User expectations are expanding for timeliness, for in-depth access at the word or image level, for rapid retrieval, and for linkages. Expert management of all this content is essential because, as David Levy astutely observed, "There is a growing awareness of attention as a highly limited resource, stemming in part from the realization that an abundance of information, good though it is in many ways, is also a tax on our attention."[6]

To serve their clients well, libraries must blend the features of the catalog with the virtues of the portal. This will require the use of a sophisticated search engine to deliver the quantity of resources, the hyperlinks, the customization and personalization, and the instantaneous access that provides the user with convenience, flexibility, and immediacy. Libraries can add value by promoting filtering and ranking which would prefer resources produced by universities, governments, and other sources that meet a set of established criteria, such as having a strong likelihood of authenticity, accuracy, or endorsement by others of standing. Added to the content retrieved by the search engine should be material contributed by libraries through a reengineered cataloging process. This reformed activity should favor timely access to a wide variety of formats. To achieve this, libraries will have to reallocate funds presently devoted to describing books and journals to materials that are proportionately underrepresented in today's catalogs, such as films, music, photographs, and digital objects. This cannot be accomplished by fine-tuning, but will rather require significant compromise and change.

Although certain titles may still receive full bibliographic description and analysis such as is conducted today using the *Anglo-American Cataloguing Rules* and the Library of Congress Subject Headings, the need to increase greatly the number of resources of interest to scholars that can be located through the library's access tool will result in the application of a different standard to many materials. For digital documents, it should be possible to derive key metadata using automation informed by and combined with human intelligence. The emphasis should be placed on identification of many new resources of value to the scholar and researcher, rather than on the cataloging of only a few, relatively speaking, new items.

By working collaboratively, libraries will ensure that they avoid redundancy, and they can aggregate their efforts to create a large-scale portal ("portalog"?) that offers access to a large quantity of high-quality resources of current interest. One of the salient distinctions of this portal will be that it will bridge the analog and digital worlds in a far more comprehensive way than most Internet search engines do, calling attention to the 96% of the world's published knowledge that does not exist electronically. In addition, it will draw on two defining characteristics of a library: the ability to provide access to the materials cited or displayed and to offer this access across time through the commitment to preserve and safeguard its collections. A critical aspect of the library portal is that for an individual library to serve its users successfully, it must connect and ally itself with other libraries and developers of commercial search engines in a highly integrated fashion.

Libraries should seek to partner with developers of portals and search engines to share expertise in a constructive way, drawing on the best each has to contribute to the goal of effective access to information. Traditional libraries have much to learn from the commercial portals about attracting and satisfying users. At the same time, libraries can call attention to the value they have offered and continue to offer for today's and tomorrow's scholars. The result will be a superior service for the world of higher education and beyond.

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[1] This article is inspired by the author's paper, "The Catalog as Portal to the Internet" (Contributed to the Library of Congress's upcoming "Bicentennial Conference on Bibliographic Control for the New Millennium," 15–17 November 2000). The full text of the paper is available at <http://lcweb.loc.gov/catdir/bibcontrol/thomas.html>.

[2] Stanley Wilder, "The Changing Profile of Research Library Professional Staff," *ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC* no. 208/209 (February/April 2000): 4. Also available online at <http://www.arl.org/newsltr/208_209/chgprofile.html>.

[3] Lori Leibovich, "Choosing Quick Hits Over the Card Catalog," *New York Times*, 10 August 2000, G1.

[4] Michael Looney and Peter Lyman, "Portals in Higher Education: What Are They and What Is Their Potential," *EDUCAUSE Review* (July/August 2000): 30.

[5] Jerry D. Campbell, "The Case for Creating a Scholars Portal to the Web: A White Paper," <http://www.arl.org/newsltr/211/portal.html> (Paper delivered at the 136th Membership Meeting of the Association of Research Libraries, Baltimore, Md., 18 May 2000).

[6] David Levy, "I Read the News Today Oh Boy: Reading and Attention in Digital Libraries," in *ACM Digital Libraries '97: Proceedings of the Second ACM International Conference on Digital Libraries, Philadelphia, PA, July 23–26, 1997*, ed. Robert B. Allen and Edie Rasmussen (New York: Association for Computing Machinery, 1997), 202.

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STATISTICS AND MEASUREMENT

Martha Kyrillidou, Senior Program Officer

LIBQUAL+: ONE INSTRUMENT IN THE NEW MEASURES TOOLBOX

by Colleen Cook, Executive Associate Dean of University Libraries, Fred Heath, Dean and Director of University Libraries, and Bruce Thompson, Professor of Educational Psychology, Texas A&M University

On 20–21 October, a symposium, "The New Culture of Assessment in Academic Libraries: Measuring Service Quality," will present a global perspective on the assessment of service quality in research libraries. This article features an update on LibQUAL+, one of the instruments in the ARL New Measures toolbox and one of the service quality measurement tools that will be discussed at the symposium. (For more information on the symposium, see <http://www.arl.org/libqual/events/oct2000msq/>.)

The web-delivered survey instrument was piloted with 12 ARL libraries in the spring of 2000. (A continually updated bibliography of LibQUAL+ studies can be accessed via the web address <http://acs.tamu.edu/~bbt6147/servqbib.htm>.) Based upon Gap Theory of Service Quality, a random sample of library patrons from each institution replied to 41 questions measuring various aspects of their library's service quality from three perspectives (perceived, desired, and minimum) using one to nine scales. Parasuraman, Berry, and Zeithaml assay the gaps that emerge among perceived, desired, and minimum expectations to identify and address service quality issues.[1] LibQUAL+ is still an emerging instrument that originated from Parasuraman, Berry, and Zeithaml's SERVQUAL tool, the industry standard for measuring service quality in the private sector. The origins of LibQUAL+ and an early report on its findings were discussed in previous issues of the *Bimonthly Report*.[2]

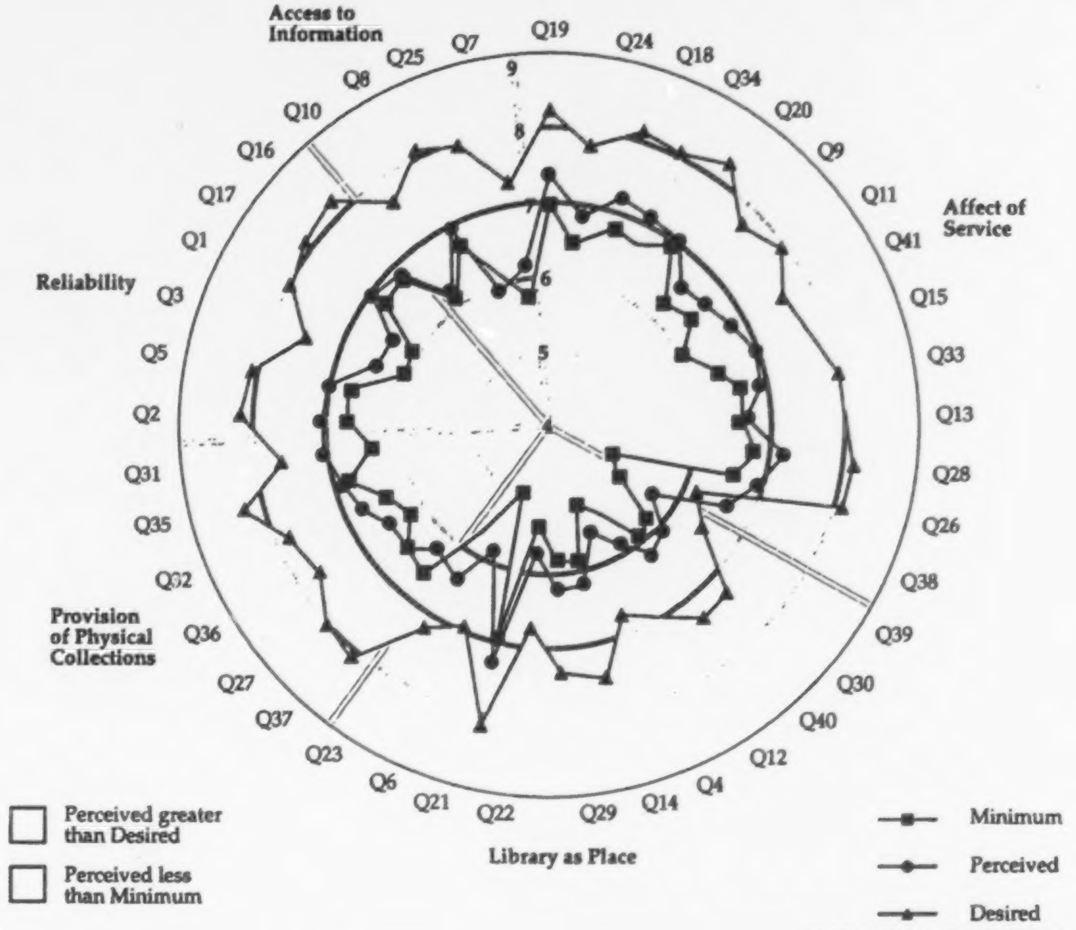
SERVQUAL was selected as the departure point for future development in assessing library service quality because it had earned a reputation for the statistical integrity of its results over its 12-year history and there had already been significant experience with the tool in academic research libraries.[3] From the start, there were theoretical issues demanding attention. The previous work at the University of Maryland and Texas A&M had failed to recover consistently the five defining dimensions of service quality that the SERVQUAL developers found in the public sector (tangibles, reliability, responsiveness, assurance, empathy). In three Texas A&M iterations only three dimensions were recovered, defined by researchers there as *tangibles*, *reliability*, and *affect of service*. The question remains, what other factors, if any, should be incorporated into the assessment of service quality in a research library setting?

While SERVQUAL functioned *a priori* as the theoretical construct of service quality from which inquiry proceeded, it was necessary for the survey to be re-grounded. Based on grounded theory, the methodological design established an inquiry paradigm to isolate additional factors that should be considered in establishing the working definition of service quality in the research library context. The expertise of external qualitative evaluator Yvonna Lincoln guided the next steps, and great care was taken to ensure a close fit between the theory selected to guide inquiry and the inquiry paradigm itself.[4] Whereas other researchers in the area of service quality have focused their qualitative inquiries upon the providers of service, the LibQUAL+ investigators were guided by the dictum of Zeithaml, Parasuraman, and Berry, that "only customers judge quality; all other judgments are essentially irrelevant."[5] Over the course of the winter of 1999–2000, 60 interviews were conducted with faculty, graduate students, and undergraduates at nine of the participating pilot institutions. Open-ended interviews lasting from an hour to an hour and a half explored from the perspective of library users the variables defining the delivery of quality library service in their experience.

The data from the interviews were collected, transcribed, and interpreted with the aid of the content-analysis software Atlas TI. Based upon initial analysis, two additional areas meriting investigation came to light in the first phase of the pilot project. Corroborating other findings, there seemed to be a clear relationship between the *provision of physical collections* and user perceptions of library service quality.[6] Likewise, there was pervasive discussion of the matter of *library as place*, a concept transcending the definition of *tangibles* as found in the SERVQUAL studies. While triggered primarily in those instances of over-crowded or substandard facilities, many of those interviewed spoke passionately of libraries as sanctuaries or havens, as contemplative environments essential for their creativity. Based on the language of the respondents, a series of questions was developed and added to the SERVQUAL core in order to test the efficacy of these two factors.

The resulting instrument combined the 22 questions of the standard SERVQUAL with 19 questions designed to measure the additional factors uncovered in the interviews. While it may have been possible to have extended the pilot instrument to follow other qualitative leads, the researchers were guided in part by recent studies that suggest the optimal completion time of a web survey is 13 minutes.[7] Careful pre-tests of the web version proved out; across all respondents to the survey

LibQUAL+ Pilot Survey Results, Spring 2000, Average Scores*



*York University not reflected in Aggregate

as it was administered in spring 2000, the average time to completion was 11 minutes and 18 seconds.[8] As explained in *ARL* 211, the study considered the issue of proportionality of the several populations from which the samples would be drawn, and determined that it would be desirable to seek roughly equal response sets of faculty, graduate students, and undergraduates. That outcome was achieved, as was a response set equally proportioned by gender, well distributed by age groupings, with strong representation across various disciplines.[9] The sample frame also had the desired effect of reaching library users. Compared with another recent survey that drew its sample from circulation data of readers checking out at least one book in the past year,[10] over 98 percent of the LibQUAL+ respondents reported using the library at least quarterly.

Analysis of the data began in June, after the survey had run to completion on all 12 campuses. As will be shown below, careful qualitative inquiry paid dividends. For the initial analysis, the responses from 4,407 participants from 11 institutions[11] were analyzed using a hierarchical model of factor analysis.[12] In the first stage of the analysis, the 41 items on the survey were found to cluster into five first-order factors, or dimensions (see accompanying graph):

- Affect of Service
- Reliability
- Library as Place
- Provision of Physical Collections
- Access to Information

The first two dimensions derive from the original SERVQUAL instrument; the other three emerged from the qualitative interviews and the resulting responses from more than 4,000 respondents.[13] While there is much work ahead to evaluate and validate the results of the first pilot phase, LibQUAL+ seems to have broken free from its SERVQUAL origins, and promises to more precisely measure the issues that the research library constituency deems important.

The next stage of the analysis identified a single, overarching, second-order factor that is noteworthy because it suggests that users may ***simultaneously*** think about quality at multiple levels. This single, second-order dimension (as yet unnamed) seems to dominate user thinking and expresses the concept of library service quality; it is saturated by all 41 items used in the survey. Yet, considerable information regarding users' perceptions that is present in the five first-order factors is *not* present in this single overarching dimension. Both levels of the factor analysis contribute to our understanding of users' perceptions of library service quality.

Even if all 41 items feed the overarching, second-order factor that defines library service quality in the eyes of users, is there anything we can learn from respondents across North America as to what is most important to them? Interestingly, among items that in the aggregate are considered almost equally important among users (Desired Mean Score 8.13–8.25 on a scale of 1–9), four correlate most closely to the Affect of Service issue, and one to Reliability. These items are:

- Readiness to respond to users' questions **(Affect, question 18)**
- Willingness to help users **(Affect, question 19)**
- Employees who have knowledge to answer users' questions **(Affect, question 20)**
- Performing services right the first time **(Affect, question 28)**
- Maintaining error-free user and catalog records **(Reliability, question 16)**

In the working out of perceived gaps, however, it is the areas of materials where the constituents are most likely to find libraries in need of improvement. As the accompanying graphic demonstrates, the two areas where the pilot libraries were found to be most deficient, falling outside the *zone of tolerance* were in the two collections areas:

- Full text delivered electronically to the individual computer **(Access, question 25)**
- Complete runs of journal titles **(Collections, question 37)**

In summary, we have found that users do perceive library service at a global level; there appears to be a single, second-order factor associated with the delivery of quality library services in a research university environment. However, our hierarchical factor analysis also demonstrates that research library users simultaneously think about library quality at multiple levels, and that all of the elements used in the LibQUAL+ survey suffuse the second-order factor. As several first-order factors contribute important and unique information to the notion of service quality, and as different users may place varying degrees of importance on first-order factors, the utility of the hierarchical LibQUAL+ model is demonstrated.

There is much work ahead. As Hendrick and Hendrick note, in the behavioral sciences "theory building and construct measurement are joint bootstrap operations."[14] A three-year grant from the U.S. Department of Education Fund for the Improvement of Postsecondary Education (FIPSE) ensures that the development path for LibQUAL+ will continue, and that the mature version of it will be available for administration by ARL. In the interim, as well as beyond, there is the iterative work of responsible science: tentatively formulating a theory based on careful qualitative work, developing a measure of that theory, evaluating the measure, revising the theory, and then proceeding cyclically back through this process time and again. Most immediately, after further evaluation and revision of the LibQUAL+ tool this fall and winter, a new iteration of the survey will be conducted with additional participants in spring 2001. LibQUAL+ seems to hold promise in assessing service quality in the research library environment; thoughtful application in the appropriate library contexts is recommended.

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[1] See A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry, "Alternative Scales for Measuring Service Quality: A Comparative Assessment Based on Psychometric and Diagnostic Criteria," *Journal of Retailing* 70 (Fall 1994): 201–230.

[2] Colleen Cook and Fred Heath, "The ARL 'LibQUAL+' Pilot Project: An Update," *ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC* no. 211 (August 2000): 12–14; Colleen Cook and Fred Heath, "SERVQUAL and the Quest for New Measures," *ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC* no. 207 (December 1999): 12–13. Available online at <http://www.arl.org/newsltr>.

[3] See, for example, Syed S. Andaleeb and Patience L. Simmonds, "Explaining User Satisfaction with Academic Libraries," *College and Research Libraries* 59 (March 1998): 156–167; Vicki Coleman, Yi (Daniel) Xiao, Linda Bair, and Bill Chollett, "Toward a TQM Paradigm: Using SERVQUAL to Measure Library Service Quality," *College & Research Libraries* 58 (May 1997): 237–251; Susan Edwards and Mairead Browne, "Quality in Information Services: Do Users and Librarians Differ in Their Expectations?" *Library & Information Science Research* 17 (Spring 1995): 163–182; Françoise Hébert, "The Quality of Interlibrary Borrowing Services in Large Urban Public Libraries in Canada (Ph.D. dissertation, University of Toronto, 1993); Danuta A. Nitecki,

"An Assessment of the Applicability of SERVQUAL Dimensions as a Customer-based Criteria for Evaluating Quality of Services in an Academic Library (Ph.D. dissertation, University of Maryland, 1995).

[4] Yvonna S. Lincoln and Egon G. Guba, *Naturalistic Inquiry* (Newbury Park: Sage, 1985), 232.

[5] Valarie A. Zeithaml, A. Parasuraman, and Leonard L. Berry, *Delivering Quality Service: Balancing Customer Perceptions and Expectations* (New York: Free Press, 1990), 16.

[6] Andaleeb and Simmonds.

[7] Christopher Antons, Miriam L. Fultz, and Bernard Asiu, "Undergraduate Perceptions of Survey Participation: Improving Response Rates and Validity" (Paper presented at the Association for Institutional Research Annual Forum, Minneapolis, May 1998), <http://ir-server.willamette.edu/forum98/18-268/AIR9818-268.htm>.

[8] Average time was operationally derived from all respondents completing at least 30 of the 41 questions.

[9] Cook and Heath, "ARL LibQUAL+ Pilot Project," 2000.

[10] Danuta Nitecki and Peter Hernon, "Measuring Service Quality at Yale University's Libraries," *The Journal of Academic Librarianship* 26, no. 4 (July 2000): 261.

[11] For this analysis, York University data captured on a different rating scale was excluded. Included were data from: University of Arizona; University of California, Santa Barbara; University of Connecticut; University of Houston; University of Kansas; Michigan State University; University of Minnesota; University of Pennsylvania; University of Pittsburgh; Virginia Tech; University of Washington.

[12] The analysis was completed by employing an approach recommended by John Schmid and John M. Leiman, "The Development of Hierarchical Factor Solutions," *Psychometrika* 22 (1957): 53–61. This solution "orthogonalizes" the two levels of analysis to each other by removing from the first-order factors any information that is also available at the second-order level.

[13] Colleen Cook, Fred Heath, and Bruce Thompson, "Users' Hierarchical Perspectives on Library Service Quality: A 'LibQUAL+' Study" (Unpublished manuscript, August 2000).

[14] Clyde Hendrick and Susan Hendrick, "A Theory and Method of Love," *Journal of Personality and Social Psychology* 50 (1990): 579.

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ARL AWARDED FIPSE GRANT FOR ASSESSMENT OF LIBRARY SERVICE QUALITY

ARL was awarded funding by the U.S. Department of Education Fund for the Improvement of Postsecondary Education (FIPSE) to develop tools for and establish a service quality assessment program. The project, "Service Effectiveness in Academic Research Libraries," developed in conjunction with Texas A&M University, is a large-scale, user-based assessment of library service effectiveness also known as LibQUAL+. It is one of ARL's responses to the need for outcomes-based assessment on behalf of academic and research libraries.

The goals of the project include:

- development of tools and protocols for evaluating library service quality;
- development of effective web-based delivery mechanisms;
- identification of best practices; and
- establishment of a service quality assessment program.

The project builds on the ARL New Measures project, LibQUAL+, initiated in spring 2000. Twelve ARL institutions participated in a pilot project using a standardized instrument measuring service quality, LibQUAL+, a modified version of SERVQUAL. (See accompanying article for a report on the LibQUAL+ project.)

The FIPSE funds for this three-year project, which begins October 2000, will cover 49.5% ($498,368) of the estimated costs of the project; Texas A&M and ARL contribute the remaining 50.5% ($508,761) of the total project costs.

Any postsecondary institution interested in participating in the project should contact Martha Kyrillidou, ARL Senior Program Officer for Statistics and Measurement, <martha@arl.org>. A website for the project is available at <http://www.arl.org/libqual/>.

MEASURING LIBRARY SERVICE QUALITY

An ARL OLMS Online Lyceum
Collaborative Learning Event
13 November–15 December 2000

This interactive online course will cover the theory and impact of measuring library service quality as well as methods to assess and improve service. For more information, see <http://www.arl.org/training/quality.html>.

DEFINING NLM'S COMMITMENT TO THE PERMANENCE OF ELECTRONIC INFORMATION

by Margaret M. Byrnes, Head, Preservation and Collection Management Section, and Chair of the Working Group on Permanence of Electronic Information, National Library of Medicine

As the volume of electronic information produced by the National Library of Medicine (NLM) continues to grow, the importance of communicating NLM's level of commitment to maintaining the availability of its online resources has become more widely recognized. Of particular concern is the ability to inform users whether an electronic resource cited today will be available in the future, retrievable from the same address, and unchanged in content. Equally important is the ability to indicate to other organizations those resources for which NLM has assumed archiving responsibility. To address these needs, the Working Group on Permanence of NLM's Electronic Information (WGP) began meeting in July 1999. The Group, which is comprised of NLM staff from throughout the organization and John A. Kunze, consultant, UCSF Medical Informatics, is focusing on electronic resources that NLM makes available to the public. Despite this limited scope, the WGP is aware that its work could provide a model for other publishers of electronic information and contribute to the development of preservation metadata standards.

Phase I

Categories of Permanence

During Phase I of its work, the Working Group identified three core categories of permanence for electronic resources: identifier validity, resource availability, and content invariance. Identifier validity is defined as the extent to which a user can be assured that a given name, number, or other identifier will not be changed or assigned to another resource. Resource availability is the extent to which a given resource will remain accessible. Content invariance is the extent to which the content of a given resource and the links it contains will remain unchanged. The rating system initially developed by the WGP is as follows:

Identifier Validity (IV)

1. Undefined or Transient
   (Either no rating has been undertaken or the identifier could be changed or reassigned.)

2. Guaranteed
   (The identifier will not be changed or reassigned to another resource. Example: a MEDLINE record.)

Resource Availability (RA)

1. No Guarantee
   (The resource may become unavailable at any time. Example: announcements.)

2. Permanently Available
   (Accessibility is guaranteed. This rating implies a commitment to archive the resource. Example: NLM annual reports.)

Content Invariance (CI)

1. Unrated
   (No rating has been undertaken or no guarantee has been made.)

2. Dynamic
   (The content may be replaced, corrected, and revised. Internal and external links could change. Example: NLM's home page.)
   a) Open
   b) Closed

3. Stable
   (The content is subject only to correction and minor additions. Internal links will be updated. Example: online exhibits.)
   a) Open
   b) Closed

4. Invariant
   (The content is static. Example: an image from the Visible Human Project.)

The optional subelements "Open" and "Closed" may be assigned to "Dynamic" and "Stable" resources to indicate whether the resource will grow in regular increments or is no longer growing.

Sample rating:

Resource	Rating	Explanation
MEDLINE (Aggregate)	IV: 2	Identifier Validity: Guaranteed
	RA: 2	Resource Availability: Permanently Available
	CI: 3a	Content Invariance: Stable/Open

Phase II

Rating Categories of Resources

During Phase II of its deliberations, a task force of the WGP categorized NLM's electronic publications by resource type and tested the proposed system by assigning ratings to the resource categories as well as to a selection of individual resources. (Sample resource categories include bibliographies, newsletters, database records, press releases, and training manuals.) This exercise showed that in many cases it would be possible to assign ratings to resource categories and eliminate the need to assign ratings to individual resources. Default ratings would be assigned to resource categories but the creators of individual resources could override them as needed.

A Condensed Rating System

The same task force addressed the question of whether the concepts included in the original rating system could be expressed in a simplified manner. It was believed that using natural language rather than alphanumeric code would make it easier for resource creators to assign ratings and users of NLM resources to understand them. In addition, it was hoped that revised wording would make it more immediately obvious that a given resource had been assigned a permanent rating. The task force developed the following condensed rating system:

- Permanent: Unchanging Content
  (Example: scanned image of a piece of correspondence in the Profiles in Science collection.)

- Permanent: Stable Content
  (Example: a MEDLINE record.)

- Permanent: Dynamic Content
  (Example: NLM's home page.)

- Permanence Not Guaranteed
  (Example: conference agendas.)

A rating of "Permanent" means that the resource will remain available and the identifier will not be changed or reassigned. Aggregate resources (e.g., databases or digital library collections) that are rated "Permanent" may be assigned the following subratings:

- Subject to Growth
  (Additional objects may be added to this resource.)

- Closed
  (Objects are no longer being added to this resource.)

For resources rated "Permanence Not Guaranteed," the following optional subratings may be used to indicate which elements are subject to change:

- identifier undefined or transient
- resource availability not guaranteed

The Working Group's Recommendations

Included in the WGP's Phase II report was the recommendation that permanence ratings be included in the metadata NLM assigns to its electronic resources. In this way, whenever a resource is assigned a rating of "Permanent," its metadata could be downloaded to the Library's catalog and upgraded to a MARC-formatted bibliographic record. The condensed permanence rating would be displayed in the MARC 583 field and distributed to the bibliographic utilities as part of the record. Because users may access a resource through the web rather than through NLM's catalog, the condensed rating would also be available in the web version.

The WGP recommended that provisional permanence ratings be assigned by the creators of the resources. Because of the institutional commitment involved, all ratings of "Permanent" for major resources such as databases would be subject to review by higher level NLM staff.

The Phase II report was submitted to NLM's Associate Director for Library Operations at the end of June and currently is undergoing internal review. If its recommendations are approved, follow-up activities would include the development of:

1) consistent policies for management of all servers that store NLM resources that have been rated "Permanent";
2) written guidelines for assigning permanence ratings;
3) NLM-wide specifications for the format and location of permanence ratings and unique identifiers;
4) a set of applications that would link to electronic resources from their unique identifiers and assist in recording and maintaining permanence ratings; and
5) a prototype system.

The WGP expects that additional changes will be made to the proposed rating system as it undergoes review and implementation. Comments are welcome and should be directed to the author at <Margaret_Byrnes@nlm.nih.gov>.

OFFICE OF SCHOLARLY COMMUNICATION

Mary M. Case, Director, ARL Office of Scholarly Communication

A VIEW FROM THE SCHOLARLY COMMUNICATION TRENCHES: "TEMPE PRINCIPLES" STIR FACULTY DISCUSSION

by David S. Ferriero, Vice Provost for Library Affairs and University Librarian, Duke University

Duke University's Library Council was established by the faculty of the university in 1928 to exercise "general supervision over matters of policy" in the main campus library and its branches. Membership is comprised of faculty, undergraduate and graduate students, and library staff. Over the life of the Council, agendas have dealt with circulation policy, the Dewey Decimal Classification system, materials budgets, technology, space needs, etc. During the past four years, issues dealing with "scholarly communication" have been on the agenda with increased frequency in one guise or another, e.g., the serials budget, ownership of vs. access to information, the promise of electronic full-text, the university's developing intellectual property policy, etc. Each discussion involved a significant amount of preparation and creativity on the part of the staff, including the presentation of spending projections and data on the problem of price inflation in scholarly publishing. Each meeting was a new opportunity to engage especially the faculty in the issues surrounding the future of scholarly communication.

Minimal success was enjoyed until we shared the "Principles for Emerging Systems of Scholarly Publishing" developed at the March 2000 Tempe, Arizona, conference sponsored by ARL, the Association of American Universities, and the Merrill Advanced Studies Center of the University of Kansas. Lively discussion ensued at two Library Council meetings resulting in a sense of understanding and ownership of the issues for the first time. The "Tempe Principles" more effectively engaged the faculty than did earlier discussions of scholarly communication issues because the Principles focus on an ideal state rather than starting from the current, problematic state. As a result, the level of discussion was raised. Furthermore, the Principles seem to personalize the issues in a way that encourages faculty to see themselves as creators and users of intellectual property and, therefore, as part of the positive change that can be effected within the system of scholarly communication.

Points of particularly spirited discussion prompted by the Tempe Principles include:

- Differences between the sciences and non-sciences—whose problem is it?
- Do junior faculty really have a choice in "judiciously assigning copyright?" Most do not want to jeopardize the publication of their work—which is necessary to earn tenure—in a dispute over retention of rights.
- The tenure case and new forms of dissemination—reflections on the quality of the information that now resides in electronic format convinces most Council members that peer review is absolutely necessary.
- Assignment of rights—I can't do what?
- The practicality of managing copyright to assure faculty access. For example, the Principles suggest a variety of models for assigning reuse permissions. How would a potential "reuser" even begin to locate a copyright holder in some of these models? Is there a role for the Association of American University Presses in streamlining the permissions process?

Despite the issues raised, the Library Council unanimously adopted the Tempe Principles and assumed responsibility for educating their colleagues, using the principles as the discussion document. Tentative plans for the fall include a feature article in the *Faculty Forum*, Duke faculty's newsletter, co-authored by a faculty member and the University Librarian, to stimulate interest in the topic. This will be followed by Library Council-hosted discussions for members of the community. In addition, the Provost and the University Librarian will be addressing the Academic Council, Duke's faculty senate, using the principles as the springboard for discussion.

While we have not reached a state of having "created change," here at Duke we have at last captured the attention and imagination of our faculty leadership. Thanks for the Principles!

The Tempe Principles are available online at <http://www.arl.org/scomm/tempe.html>.

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NEW ON THE **Create Change** WEBSITE

The CREATE CHANGE website is rapidly growing. New features include:

In the *Resources* section
<http://www.createchange.org/resources.html>

- Tables and Graphs
- Conferences and Symposia
- Success Stories

In the *Issues* section
<http://www.createchange.org/librarians/issues/quick.html>

- Managing Your Copyrights

Visit the CREATE CHANGE website often to view new content, including a forthcoming section on *Editors Agreements*.

<http://www.createchange.org/>

ARL ACTIVITIES

Lee Anne George, Program Planning Officer

TRANSITIONS

Columbia: Elaine Sloan announced her intention to retire as Vice President for Information Services and University Librarian effective 1 July 2001.

Florida State: Charles Miller retired as Director of Libraries effective 31 August 2000. Bill Summers, retired Professor and Dean of the School of Information Studies, is serving as Acting Director of Libraries.

Georgia Tech: Richard Meyer, currently Director of the Library at Trinity University, was named Dean and Director of Libraries effective 16 October.

Guelph: Michael Ridley, Chief Librarian, is on administrative leave through 31 December to conduct research on digital libraries and work with the Ontario Library Association. Helen Salmon, Manager, Social Science and Arts Information Services, is Acting Chief Librarian during this period.

York: Ellen Hoffmann announced her intention to retire as University Librarian effective spring 2001 when she will begin an extended sabbatical leave.

OTHER TRANSITIONS

Institute of Museum and Library Services (IMLS): Elizabeth Sywetz, IMLS' first Deputy Director for Library Services, resigned on 24 August 2000.

ARL STAFF CHANGES

Dawn Haglund joined the staff on 25 August as OLMS Training Program Assistant. Ms. Haglund brings extensive database management and event planning experience to the OLMS; she holds a B.A. in Business Administration with a concentration in Human Resources and Marketing. Ms. Haglund can be reached at <dhaglund@arl.org>.

Melanie Hawks, former ARL OLMS Adjunct Faculty Member and Staff Development Officer for the University of Utah Library, joined the OLMS staff on 5 September as Program Officer for Training. Ms. Hawks has strong facilitation skills and the ability to design both in-person and web-delivered content that is dynamic and practical. She may be contacted at <melanie@arl.org>.

Kaylyn Hipps, Editorial Specialist and Assistant Editor of the *ARL Bimonthly Report*, assumed a new role at ARL as Web Developer & Analyst, working primarily on the LibQUAL+ project. She brings five years of web-development experience and three years of data-analysis experience to the project. She may be reached at <kaylyn@arl.org>.

Bradley Houseton, ARL Communications & Marketing Coordinator, announced her resignation effective 29 September to lead development efforts for the Society of General Internal Medicine.

DeEtta Jones, former Director of ARL Diversity Initiatives, was named ARL OLMS Director of Organizational Learning Services. In this newly created position, Ms. Jones assumes overall leadership of the ARL Office of Leadership and Management Services.

UCITA: A GUIDE TO UNDERSTANDING AND ACTION

A Satellite Teleconference

13 December 2000

1:00–4:00 p.m. Eastern Standard Time

The Uniform Computer Information Transactions Act (UCITA) is a proposed state law that would create a unified and potentially problematic approach to the licensing of software and information. Two states—Maryland and Virginia—have passed UCITA, and it will be under consideration in many other states in the near future. UCITA's broad scope and focus on software and information raise issues of great significance to the research library community, in particular licensing, copyright, and fair use.

This teleconference will provide a valuable "primer" on UCITA, strategies for dealing with the legislation in your state, and an opportunity to ask the panelists questions. It is presented by ARL and four other library associations: AALL, ALA, MLA, and SLA.

Panelists:

James Neal, Dean of University Libraries, Johns Hopkins University
Rodney Petersen, Director, Policy and Planning, Office of Information Technology at the University of Maryland
Sally Wiant, Director of the Law Library and Professor of Law, Washington and Lee University
Cathy Wojewodzki, Librarian, Reference Department, University of Delaware Library and former member of the Delaware legislature

All four panelists have been actively involved in the UCITA debate in their home states.

Registration details are on the ARL website at <http://www.arl.org/ucita.html>.

ARL

ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036.
202-296-2296 FAX 202-872-0884
<http://www.arl.org/newsltr/>
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Executive Director: Duane E. Webster
Editor: G. Jaia Barrett, Deputy Executive Director
Assistant Editor: Kaylyn Hipps
Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year.

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ARL CALENDAR 2000–2001

2000

October 16–November 24	Training Skills Online: Facilitating Effective Learning *Online Lyceum*
October 17–19	**ARL Board and Membership Meeting** *Washington, DC*
October 20–21	Measuring Service Quality *Washington, DC*
October 23–26	Library Management Skills Institute II: The Management Process *Atlanta, GA*
October 30–31	To Preserve & Protect: The Strategic Stewardship of Cultural Resources Library of Congress and ARL *Washington, DC*
November 1–3	Project Management Institute: Getting Things Done or Getting the Outcomes You Want *Seattle, WA*
November 13–15	Library Management Skills Institute I: The Manager *Evanston, IL*
November 13–December 15	Measuring Library Service Quality *Online Lyceum*
November 16–17	Advanced Workshop on Licensing Electronic Information Resources *New Haven, CT*
December 4–5	From Data to Action: An ARL Workshop on Strategies to Redesign ILL/DD Services *Washington, DC*
December 7–8	CNI Task Force Meeting *San Antonio, TX*
December 13	UCITA: A Guide to Understanding and Action *Teleconference via satellite* *1:00–4:00 p.m. EST*

2001

February 8–9	**ARL Board Meeting** *Washington, DC*
May 23–25 **(NOTE NEW DATES!)**	**ARL Board and Membership Meeting** *Toronto, Ontario*
July 23–24	**ARL Board Meeting** *Washington, DC*
October 16–19	**ARL Board and Membership Meeting** *Washington, DC*

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A BIMONTHLY REPORT ON RESEARCH LIBRARY ISSUES AND ACTIONS FROM ARL, CNI, AND SPARC

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ESTABLISHING A ROLE FOR RESEARCH LIBRARIES IN LEARNING OUTCOMES ASSESSMENT PROGRAMS

by Julia C. Blixrud, ARL Director of Information Services

The ARL New Measures Initiative, developed out of a retreat held in January 1999,[1] is responding to two challenges currently facing research libraries. The first is to demonstrate how research libraries have an impact in areas of importance to their institutions; the second is the increasing pressure to maximize the use of resources through cost containment and reallocation by finding best practices upon which to develop benchmarks for services. Learning and its assessment have become a focus of attention at many academic campuses and the role of the library in teaching and learning emerged early in the retreat discussions as an area in which measures are urgently needed. Retreat participants noted, however, it is difficult to measure the library's contribution since, in many cases, the library is one step removed from the teaching and learning process. How to demonstrate the library's impact in this specific area of importance became a subject of discussion at succeeding ARL meetings.

Subsequently, those interested in this topic agreed that ARL should look for a means to develop a strategy for involving research libraries in campus assessment activities and to demonstrate the value of the library to the learning community. To that end and with the financial support of 16 ARL member libraries, Dr. Kenneth R. Smith, Eller Distinguished Service Professor of Economics and Faculty Associate to the Provost at the University of Arizona, was engaged to prepare a paper on the possible roles that libraries can play in the learning process. Dr. Smith has worked widely in the area of outcomes assessment activities and his paper provides the necessary background information about learning assessment efforts in higher education and offers suggestions for possible action by the ARL community.

While libraries have for some time been engaged in teaching through such activities as bibliographic instruction and have worked with faculty in the areas of information literacy, the results of those activities are based on learning objectives the library often defines for itself. Dr. Smith proposes a closer library collaboration with faculty as they address learning outcomes defined at the department level and the development of a shared model for creating and measuring learning objectives that encourages the integration of library offerings into the curriculum. In particular he notes that "shared need creates opportunity" for the library to become an even more central part of the University learning community since this topic is high on the agenda of many institutions.

As with other new measures activities, the next steps for those interested in this topic will be to create a project to take this effort further. Similar to other ARL New Measures projects, this project may be self-supported, grant-funded, or a combination. Individual institutions are also encouraged to consider the suggestions in the paper, since, as Dr. Smith suggests, this is a time for experimentation.

Following are brief, edited excerpts from Dr. Smith's paper highlighting the current role assessment is playing in learning outcomes in the academic environment and some suggestions for what libraries can do to engage their academic department colleagues in conversation about learning outcomes. The full text of the paper appears at <http://www.arl.org/stats/newmeas/heo.html>.

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[1] Background information on the retreat can be found at <http://www.arl.org/stats/newmeas/nmbackground.html>.

NEW ROLES AND RESPONSIBILITIES FOR THE UNIVERSITY LIBRARY: ADVANCING STUDENT LEARNING THROUGH OUTCOMES ASSESSMENT

by Kenneth R. Smith, Eller Distinguished Service Professor of Economics and Faculty Associate to the Provost, University of Arizona

The Changing Environment

The relevance of learning as a central concept is that it requires us to focus attention on the student's experience. It requires that we rethink the curriculum, moving from a model in which we package knowledge around the expertise of the faculty to a model based on the learning outcomes realized by students. These outcomes include not only what students know, but also the skills they develop, what they are able to do, and the attitudes of mind that characterize the way they will approach their work over a lifetime of change.

This concept of learning requires a shift in focus from the teacher's knowledge to the student's understandings and capabilities. This shift in focus leads to a new perspective on the development of quality in the academic enterprise. More than anything, it requires the faculty to bring the strength of the research paradigm into the learning process. The high quality of research in American universities is, in part, the result of the central role of assessment in the research process. The best evidence of this value is the fact that, in research, faculty put their assessment activities (peer review, participation on peer panels) on their resumes.

In viewing our mission from the student's perspective, we must constantly ask whether student learning is enhanced by the way we teach, by the organization of the university, by the structure of the academic program, and by the activities of faculty and other professionals. The assessment of student outcomes is a means of focusing our collective attention, examining our assumptions and creating a shared academic culture dedicated to understanding what we are doing and how well we are doing it and to improving the quality of learning that results.

What has become clear is that there is a broader view of the learning outcomes that is necessary for success. It is recognized that universities provide their graduates with an excellent base of knowledge. It is a measure of our success that their knowledge, to a significant extent, does not differentiate among our graduates. Their ability to apply knowledge in new situations, their skills (communication, teamwork, information and technical literacy), and the values and attitudes that affect how they work have become more critical factors in determining how effective graduates are as they apply themselves throughout their careers.

The University Response

To respond to these new expectations involves developing the scholarship of teaching and learning. With an understanding of student learning objectives, the scholarship of teaching and learning identifies critical issues, uses research methods, and applies results to understand and improve learning outcomes.

For over a decade, institutional and professional accreditation bodies have been shifting their attention from input measures (faculty, courses, books) to outcomes measures (what students learn). Universities and colleges are required to develop and implement a student outcomes assessment program. Assessment requires academic organizations (departments, colleges, universities) to:

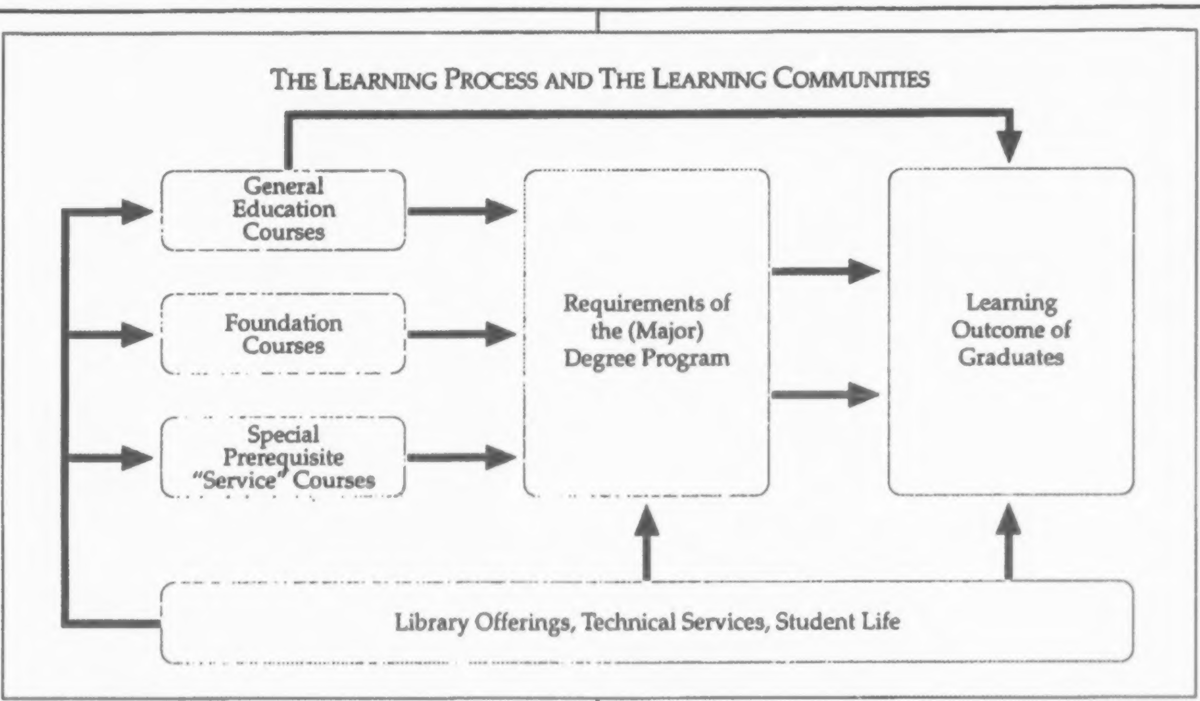
- make expectations and standards for quality explicit and public;
- systematically gather evidence on how well performance matches those expectations and standards;
- analyze and interpret the evidence; and
- use the resulting information to document, explain, and improve performance.

More than anything, assessment is a means for organizing a conversation among the faculty and other professionals responsible for an academic program. The objectives of this conversation are to:

- understand our students;
- determine learning outcomes required for student success;
- identify how the academic program achieves desired learning outcomes;
- measure the extent to which outcomes are achieved; and
- use the knowledge to improve academic programs.

Faculty have always assessed the performance of individual students within their individual courses. The focus of outcomes assessment is on the collective success of the program in developing the competencies of the students in the program. The faculty are being asked to accept responsibility for a broader set of outcomes. To a significant extent this represents a new challenge because, while faculty are knowledge experts, they are not necessarily learning experts.

The focus on learning outcomes leads to a consideration of the learning process and the learning community. Consider the accompanying figure. The learning outcomes represent a set of competencies of the graduate. From the University's perspective, they are achieved as a result of a total experience over a period of four (or more) years. Each element of the educational program contributes, directly or indirectly, to their achievement. Looking at the learning process allows us to recognize the



THE LEARNING PROCESS AND THE LEARNING COMMUNITIES

General Education Courses
Foundation Courses
Special Prerequisite "Service" Courses
Requirements of the (Major) Degree Program
Learning Outcome of Graduates
Library Offerings, Technical Services, Student Life

various activities that contribute to learning. On the far left of the figure we see how foundational courses (math, composition, etc), general education courses, and special prerequisite service courses prepare the student for the major. The requirements for the major are designed to produce the learning outcomes necessary for the graduate to be successful. Across the bottom of the figure we see how the program offerings of the library, student life and technical services can contribute to the learning outcomes of the graduate.

Looking at the learning community allows us to consider how faculty, students, and other learning professionals can contribute to learning outcomes. The faculty responsible for the major is in the best position to develop the complete set of learning outcomes, since those outcomes will depend on the specific objectives for the degree program. In doing so they will need to incorporate the outcomes that the faculty of the University have concluded are important for all students. They will also recognize that the department can take advantage of the contributions of colleagues throughout the university.

The American Association for Higher Education's *Principles of Good Practice for Assessing Student Learning*[1] recognize that "student learning is a campus-wide responsibility, and assessment is a way of enacting that responsibility. Faculty play an especially important role, but assessment questions can't be fully addressed without participation by student affairs educators, librarians, administrators, and students....assessment is not a task for a small group of experts but a collaborative activity; its aim is wider, better informed attention to student learning by all parties with a stake in its improvement."

The Library and Student Learning Outcomes

How does the focus on learning outcomes affect the mission of the library? Like other communities at the University, the library must move from a content view (books, subject knowledge) to a competency view (what students will be able to do). Within the new environment, we need to measure the ways in which the library is contributing to the learning that the University values. Like the general education program, the library has a direct and an indirect interest in the learning outcomes for all the students at the University. Like the Physics Department, for example, the library should be able to contribute to the achievement of learning outcomes for various academic programs across the University.

It is useful to begin by asking, within their own expertise and their understanding of what will make students successful, what do library professionals consider key learning outcomes. One potential answer to this question is provided by the *Information Literacy Competency Standards for Higher Education*[2], approved by the Association of College and Research Libraries on 18 January 2000. As an alternative, I asked two groups of librarians to help me define a set of learning outcomes. My goal was not to achieve a definitive answer but rather to provide an example that would help me discuss how academic libraries might begin to participate in this campus-wide activity. The following list is illustrative of what might be produced in such an exercise.

Student Learning Outcomes

- Become self reliant (comfortable and confident) in information literacy skills including:
    - identifying information needs;
    - finding/locating information;
    - selecting relevant information;
    - assessing and evaluating information;
    - synthesizing information;
    - using information effectively; and
    - presenting information.
- Understand and use the information search process (e.g., Kuhlthau model).
- Understand different formats of information and deal with them effectively.
- Be aware (have an accurate mental model) of the structured nature of information.
- Understand how to evaluate bias and the credibility of information.
- Appreciate the way the quality of information varies along an historical continuum.
- Understand the social/ethical/political/economic implications of information and intellectual property.
- Understand the research process through which new knowledge is created.
- Understand the scholarly communications cycle and its application to scholarly research.
- Become self-confident and comfortable in information-rich environments.
- Develop attitudes of openness, flexibility, curiosity, creativity, and an appreciation of the value of a broad perspective.

Developing a set of learning outcomes will allow libraries to determine the extent to which their interests are aligned with the expectations of other academic communities in the University. They will find that faculty responsible for the general education program as well as those responsible for many of the academic degree programs also are interested in critical thinking, the effective use of information and technology, the search process, and collaborative reasoning.

We have described above how current expectations require consideration of a broader set of student learning outcomes, not simply the subject material of a particular program. We discover that some of these outcomes are common to programs across the University. What students need to be able to do (critical thinking and creative ability), their ability to manage technology and implement an efficient information search, and their skills in communicating and collaborative reasoning are fundamental across many subject domains.

The library can build on a shared view of what are important student learning outcomes. All the individual communities are being asked to prepare students in ways that go beyond their expertise in their fields. It is this shared need to go beyond our traditional focus on what students need to know that creates an opportunity for the library.

Consider for a moment the way in which a department faculty might look at the learning outcomes for their degree program and how they are achieved through the course requirements. Having agreed on what outcomes they believe are important to their graduate's future success, they can ask the faculty responsible for each course to identify the extent to which each outcome is a focus of the course. Collectively, across the curriculum, they can determine which outcomes are covered to a major, moderate, or minor extent. At this point, while they haven't yet assessed how well their students have developed on each learning outcome, they can evaluate whether enough attention is being paid to individual outcomes.

Departments may be very receptive to including in their courses, "offerings" developed and delivered by the library to increase the emphasis on a number of shared outcomes, especially where the expertise of the library complements the expertise of those in the academic programs. By "offerings," we mean units of learning materials designed to develop competency in specific learning outcomes that are considered important by the library and by other academic programs. They are a way to give the library a curriculum (its own set of course segments) and an opportunity to connect this curriculum to other academic programs.

To be effective, these "offerings" must be incorporated into required courses. Thus, there is a need for the library to engage in a dialogue with departmental faculty in order to identify ways in which they can contribute to the learning outcomes of the academic program. The library must take the initiative in determining what the library has to offer that will help the department achieve greater success in achieving their learning outcomes. It is unlikely that the department on its own will identify the library as a place to turn for help.

To pursue this strategy also requires that the library create new roles for its learning practitioners. To some extent and in some libraries this process of change has begun. Libraries have developed organizational strategies to serve the various academic communities. But the focus to date is primarily on making information more and more accessible rather that addressing specifically the learning outcomes important to student success. The library needs to ask what kind of expertise is required to be actively engaged in the learning process and an effective partner in achieving learning outcomes. It then will be in a position to adapt roles and responsibilities of its professionals to take full advantage of the opportunity.

What works best at this stage is experimentation. At the University of Arizona, we have developed a pilot initiative to learn how to help academic departments respond to expectations for assessment of student outcomes. The strategy was to begin with volunteer departments interested in the assessment of student outcomes, provide them with information and support and make their experiences available to others. Participants agreed that stories and examples are helpful. These stories and examples are being shared through periodic meetings and through the organization of a "tool kit." A description of our tool kit is included in the appendix [to the full paper]. It is important for libraries to understand the processes that are used to define learning outcomes, to select measures, to collaborate with other academic departments, and to use the results to improve their programs. In time, a tool kit will include a composite of best practice ideas that can be adopted by other departments.

As more and more major research universities are successful in using outcomes assessment to improve student learning and to demonstrate the way they are preparing students, it will be important that libraries are an effective part of their campus assessment program. Within the community of research universities, there are a number who are already leaders in the assessment of student outcomes. The University of Colorado at Boulder has almost a decade of experience, a testament to the impact of a mandate by the Governor. Others who are significantly engaged are the University of Wisconsin–Madison and the University of Illinois at Urbana-Champaign.

A Role for ARL Libraries

A pilot process for ARL would involve a number of libraries working through a sequence of activities and sharing experiences in periodic meeting and, more importantly, in a best-practice tool kit. The activities would include:

- Develop learning outcomes from the library's perspective.
- Develop curriculum segments or "offerings" through which the library would achieve the outcomes.
- Understand the learning outcomes of academic degree programs.
- Consider how library offerings can be integrated into academic courses to achieve shared outcomes.
- Identify ways to measure how well outcomes are being achieved.
- Collect data and use information to modify curriculum strategies.

To be successful in this new era, the library must contribute to student learning. This represents an expanded responsibility and a more active role in the learning process. The focus has moved beyond access to content or to tools. What is important is how the library's capabilities can provide solutions that measurably impact the quality of learning. It will require a significant period of learning new ways to participate and new roles for the library professionals. To make this period of learning effective, ARL needs to organize a pilot initiative and share creative solutions with all its members. In this way, member institutions will be better able to turn student outcomes assessment into an important opportunity to make the library an even more central part of the University.

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[1] The Principles can be found at <http://www.aahe.org/principl.htm>.

[2] ACRL has made the standards available at <http://www.ala.org/acrl/ilcomstan.html>.

LEARNING OUTCOMES WORK IN PROGRESS

ARL libraries working in the area of learning outcomes include:

University of Arizona—
Information Literacy Initiative
<http://dizzy.library.arizona.edu/infolit/InfoLit2000/infolit.shtml>

University of California, Berkeley—
The Teaching Library
<http://www.lib.berkeley.edu/TeachingLib/>

University of Washington—UWired Program
<http://www.washington.edu/uwired/>

The Association of College and Research Libraries (ACRL) is working in this area, as well, and has received a National Leadership Grant from the federal Institute of Museum and Library Services (IMLS) for its project, "Assessing Student Learning Outcomes in Information Literacy Programs: Training Academic Librarians." The purpose of the project is to give librarians the skills to create baseline data that support the merits of information literacy programs. The $150,000 grant will fund the training of academic librarians to work with faculty to design, implement, and evaluate tools for assessing student learning outcomes resulting from information literacy courses taught by librarians and faculty.

Also, see ACRL's Institute for Information Literacy (ILL) website **<http://www.ala.org/acrl/nili/nilihp.html>** and ACRL's "Student's Guide to Evaluating Libraries in Colleges and Universities" at **<http://www.ala.org/acrl/evalguide.html>**.

DATA GATHERING PRACTICES IN THE NETWORKED ENVIRONMENT

by Wonsik "Jeff" Shim, Charles R. McClure, and John Carlo Bertot, Information Use Management and Policy Institute, School of Information Studies, Florida State University

We are pleased to announce the results from the first phase of the "ARL E-Metrics Project: Developing Statistics and Performance Measures to Describe Electronic Information Services and Resources for ARL Libraries," which began in May 2000.[1] Overall, Phase I finds that a number of ARL libraries participating in the project have created practicable strategies and approaches for developing statistics and performance measures to describe use, users, and uses of electronic and networked information services and resources. Despite these strategies it appears to be too early to offer "best practices" in developing and using such statistics and performance measures. The study also identified a number of key issues that will require additional attention as the project continues into Phase II.

The three primary goals of this project are to:

- develop, test, and refine selected statistics and performance measures to describe electronic services and resources in ARL libraries;
- engage in a collaborative effort with selected database vendors to establish an ongoing means to produce selected descriptive statistics on database use, users, and services; and
- develop a proposal for external funding to maintain the development and refinement of networked statistics and performance measures.

The two objectives of this initial phase were to (1) identify and describe the current state of the art of statistics and performance measures for networked services and resources in ARL libraries and (2) organize an ARL Working Group on Database Vendor Statistics to begin discussions with database vendors.

Phase I relied on the following types of data collection methods:

- survey questionnaires;
- site visits to selected libraries;
- sample vendor reports supplied by members of the Vendor Statistics Working Group;
- sample library-generated reports obtained from project participants; and
- follow-up interviews as necessary.

These efforts produced a number of findings and identified key issues and recommendations that are summarized in this report. However, it is important to stress that the findings and recommendations are based on data from 24 participating libraries and may not be generalizable to the larger group of ARL libraries.

A summary of the key findings from Phase I of the study follows.

Findings from the Survey

Analysis of the E-Metrics survey responses reveals a wide range of data collection and use activities among the 24 project participants. It appears that measures related to patron-accessible resources and costs are collected more consistently and systematically than measures related to electronic resource use or users of those resources. Due to the often inconsistent and non-comparable nature of vendor-supplied statistics, libraries have considerable difficulty in tracking overall electronic database usage and use patterns.

The collected data seem to be shared widely among library staff and with parent institutions. However, the manner in which the information is communicated and the nature of the reporting process appear to be limited. Data are most often used to make purchasing decisions for licensed vendor materials. People also indicated various uses of the data for the purpose of internal and external reporting and service assessment and evaluation.

Regarding the most important issues related to performance measurement of networked resources and services, the majority of respondents cite the lack of consistent and comparable statistics from database vendors as the most serious problem. Relatively few respondents recognized or identified problems associated with the library's inability to process and utilize collected data.

Findings from Vendor Reports

Analysis of usage statistics from 12 major database vendors reveal that there is a wide range of different practices and that progress is necessary in several areas, including standardization of core statistics, report delivery method, and assuring the provision of definitions of reported statistics. There are some signs in the way vendors report data that indicate increased cooperation between libraries and vendors.

Findings from Site Visits

Libraries reside in different operating environments and have very different needs in terms of data to describe electronic services and resources. The environment differs because of the institution's involvement with the library operation, the library's top management attitude toward evaluation efforts, and the library's data-related needs. To analyze to what extent these differences may affect efforts to find a common set of e-metric measures for research libraries, four libraries were visited (Virginia Tech, University of Pennsylvania, Yale University, and New York Public Library). The site visits proved to be very useful for documenting current practices and elaborating on some of the results of the survey. For example, libraries have a serious problem managing information describing the use of electronic resources and services. This is particularly the case with regard to

PROPOSAL FOR PHASE II FIELD TESTS

During Phase II of the ARL E-Metrics Project, the focus shifts to the identification and field testing of a *preliminary* set of statistics and measures. This is an essential step toward uniform reporting practice across ARL libraries. Following is a set of preliminary data elements or statistics that are under consideration for field testing at select ARL libraries.

Statistics

Electronic Resources and Services:

- number of electronic full-text journals (hosted by library);
- number of librarians providing electronic reference;
- virtual visits to networked library resources;
- electronic reference transactions; and
- number of public-access workstations.

Electronic Database:

- number of electronic full-text journals (through subscription);
- logins (sessions)*;
- queries (searches)*;
- items examined (viewed, downloaded, emailed, printed)*;
- turn-aways (requests exceed simultaneous user limit)*; and
- total user connection time to vendor databases.

Instruction:

- number of people participated in user instruction on electronic resources.

Cost of Electronic Databases and Services:

- cost of electronic database subscriptions;
- cost of internal digital collection construction; and
- cost per items examined (subscribed databases).

Measures

- % electronic reference transactions of total reference;
- % electronic materials use of total library materials use;
- % remote library visits of all library visits; and
- ratio of public access workstations to university population (number of faculty, staff, and students).

* From the November 1998 ICOLC (International Coalition of Library Consortia) Guidelines for Statistical Measures of Usage of Web-Based Resources <http://www.library.yale.edu/consortia/webstats.html>.

The study team emphasizes the preliminary and experimental nature of these proposed statistics and measures.

For statistics related to database vendor materials, the project team and the Vendor Statistics Working Group will be working with key database vendors on promoting best practice reporting of database use statistics by standardizing definitions of reported statistics, data delivery, and file formats.

Readers interested in the statistics examined in Phase I of the E-Metrics Project should refer to the Phase I Project Report available at the Project's website <http://www.arl.org/stats/newmeas/emetrics/>. Definitions of statistics listed above and additional statistics and performance measures will be forthcoming and will be available via the Project web page.

licensed vendor materials primarily because descriptive data often reside under vendor control. Libraries often have to manage different interfaces to obtain different types of resources, and, accordingly, usage statistics typically are distributed among several dozen database vendors and consortia. Due to a lack of standardized reporting practices, usage reports are difficult to consolidate, or it takes an enormous amount of effort to collect such data. Non-vendor-based data collection efforts to describe electronic services and resources appear to have received less attention than vendor database statistics efforts.

Additional Issues

Phase I also identified a number of issues that will require additional discussion and resolution:

- *Complexity of the topic*: participating libraries, vendors, the study team, and users may not all have a full and shared understanding of the complexity of developing statistics and performance measures for electronic services and resources.
- *Diverse context for developing statistics and performance measures*: each ARL library operates in a unique setting that affects the development and use of specific statistics and measures.
- *ARL library responsibilities and level of effort*: there are a range of internal factors that affect the degree to which the library can provide resources and an adequate level of effort to collect data.
- *Focus on non-vendor-based data sources*: there are a number of statistics and measures to develop that do *not* depend on the database vendors.
- *Coordination among libraries and library organizations*: there are numerous libraries and organizations, such as the National Information Standards Organization, National Commission on Library and Information Science, International Coalition of Library Consortia, Digital Library Federation, etc., who are interested in developing standards for measuring electronic and networked services and resources. Information sharing and coordination of efforts will maximize the usefulness of each initiative for all libraries.

The full report on Phase I discusses in greater detail these issues, which will be important areas for attention in Phase II of the study.

Phase II

Although findings from Phase I of the study did not identify a set of "best practices" for developing electronic and networked statistics and performance measures, the study team can recommend a number of very specific strategies that can assist participating libraries better prepare for data collection to produce such statistics.

These strategies include creating a culture of evaluation; stressing the use and development of statistics and measures in strategic planning documents; reorganizing the library for assessment, data collection, and reporting; and developing a data advocate within the library.

The next steps to be taken in Phase II include:

- developing and field-testing possible statistics and performance measures to describe services and resources in the electronic environment (see accompanying proposal on page 7);
- addressing the key issues outlined;
- convening the Vendor Statistics Working Group and meeting with selected vendors; and
- conducting or participating in a number of meetings to coordinate the library community's efforts to develop such statistics and measures.

Phase II will be completed in June 2001 and will result in a short manual that proposes statistics and measures that libraries can use to describe and assess electronic services and resources.

The complete Phase I Project Report is available at <http://www.arl.org/stats/newmeas/emetrics/phaseone.pdf>.

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[1] A group of 24 ARL member libraries funded the study and are participating in it; this project is under contract with Florida State University's Information Use Management and Policy Institute and is directed by Charles R. McClure, Wonsik "Jeff" Shim, and John Carlo Bertot under the leadership of project co-chairs, Sherrie Schmidt, Dean of University Libraries, Arizona State University Library, and Rush Miller, University Librarian and Director, University of Pittsburgh.

ROUND-UP OF OTHER E-METRICS DEVELOPMENTS

by Martha Kyrillidou, Senior Program Officer

A number of e-metrics developments and projects are taking place. To help disseminate information about ongoing work on this complex topic, and to encourage cooperation among projects, brief highlights from related efforts are summarized below.

DLF Initiative

The Digital Library Federation (DLF) named Denise Troll, Assistant University Librarian for Library Information Technology at Carnegie Mellon University Libraries, a DLF Distinguished Fellow to spearhead the part of the DLF's program that aims to identify and evaluate measures that are appropriate for assessing the use and effectiveness of digital library collections and services. For more information, see <http://www.clir.org/diglib/use.htm>.

European Commission EQUINOX Project

The EQUINOX project is funded under the Telematics for Libraries Programme of the European Commission. This project addresses the need of all libraries to develop and use methods for measuring performance in the new networked electronic environment, alongside traditional performance measurement, and to operate these methods within a framework of quality management. It proposes 12 performance indicators complementing ISO 11620—1998 *Information and Documentation: Library Performance Indicators*—and tries to develop a software tool that will help libraries integrate various performance indicators with quality management approaches. For more information, see <http://equinox.dcu.ie/>.

U.K. Examines Vendor Usage Statistics

The Publishing and Library Solutions Committee (PALS) Working Group on Online Vendor Usage Statistics, established in the U.K. and chaired by Richard Gedye, Journals Sales and Marketing Director, Oxford University Press, will address the following:

- Research current and planned availability of vendor-based usage statistics for online products.
- Research current initiatives to develop accepted codes of practice/guidelines in this area.
- Research current library wants.
- Produce realistic code of practice/guidelines.
- Market the code of practice/guidelines to vendors and hosting systems; get them accepted/adhered to.
- Research the possibility of centralized provision, e.g., a usage statistics clearinghouse.

ICOLC to Review Guidelines for Measuring Usage of Web Resources

The International Coalition of Library Consortia (ICOLC) called upon the leadership of Sue Phillips from the University of Texas to review and propose additions or revisions to the *ICOLC Guidelines for Statistical Measures of Usage of Web-based Indexed, Abstracted, and Full-Text Resources*. The next ICOLC meeting is scheduled to take place in April 2001.

Recent Publications

Statistics and Performance Measures for Public Library Networked Services, by John Carlo Bertot, Charles R. McClure, and Joe Ryan. Chicago: American Library Association, October 2000.

This book recommends 13 national statistics and measures for public libraries.

Performance Measures for Federal Agency Websites, by Charles R. McClure, J. Timothy Sprehe, and Kristin Eschenfelder. Washington: U.S. Government Printing Office, October 2000.

This report analyzes the impact of federal policies affecting website development and proposes 17 performance measures.

White Paper on Electronic Journal Usage Statistics, by Judy Luther. Washington: Council on Library and Information Resources, October 2000.

This White Paper calls for working with publishers to facilitate the development of statistics in the industry. See <http://www.clir.org/pubs/reports/pub94/contents.html>.

RESEARCH LIBRARY SPENDING ON ELECTRONIC SCHOLARLY INFORMATION IS ON THE RISE

by Martha Kyrillidou, Senior Program Officer

How much do libraries spend on electronic resources? Librarians are interested in knowing how much libraries spend on electronic resources and whether their level of investment is on par with other institutions and their peers. But in addition to librarians, many information industry analysts are trying to estimate the extent of the electronic publishing market—especially commercial electronic scholarly publishing—and the speed with which it is growing, using libraries' experience as a proxy in the absence of other indicators.

In 1997–98, Timothy Jewell of the University of Washington analyzed the ARL Supplementary Statistics data in an attempt to answer questions about how research libraries are spending money on electronic scholarly information. The table presented here is an update of some of the trends he originally identified. To understand the caveats and measurement issues related to the ARL Supplementary Statistics data, see <http://www.arl.org/stats/specproj/jewell.html>.

Experimental data collected by ARL libraries over the last decade indicate that the portion of the library materials budget that is spent on electronic resources is indeed growing rapidly, from an estimated 3.6% in 1992–93 to 10.56% in 1998–99. In 1998–99, 105 ARL university libraries reported spending over $77 million on electronic resources with the majority of spending being on electronic serials and subscription services. Thirty-seven ARL libraries also reported another $7.4 million expended on their behalf through centrally funded consortia.

In addition to library materials funds, libraries spent $10 million for document delivery and interlibrary loan activities and $19 million for bibliographic utilities, networks, and consortia in 1998–99. These expenditures come from the library's operating budget and exclude staff costs.

The current data from the Supplementary Statistics cannot answer all of our questions but they do tell us that libraries are spending rapidly increasing amounts of money for electronic information resources; the percent of the library materials budget is one indicator telling that story.

The *ARL Supplementary Statistics 1998–99* is available for $44 to member libraries and $100 to nonmembers (plus $6 shipping and handling per publication), and is available on standing order. For ordering information, please contact ARL Publications at <pubs@arl.org>. For more information about the ARL Supplementary Statistics, see <http://www.arl.org/stats/arlstat/#sup>.

ELECTRONIC RESOURCES AND LIBRARY MATERIALS EXPENDITURES IN ARL UNIVERSITY LIBRARIES

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99
a. Computer File Expenditures (monographic/onetime)							
Total	$14,147,625	$20,132,553	$22,030,727	$24,639,822	$8,013,055	$11,189,103	$10,848,219
Average	$172,532	$236,854	$247,536	$262,126	$87,098	$122,957	$121,890
Median	$148,158	$212,936	$217,988	$219,178	$47,932	$52,311	$54,024
Number of Libraries Reporting	82	85	89	94	92	91	89
b. Electronic Serial Expenditures							
Total	n/a	n/a	$11,847,577	$15,170,971	$40,956,696	$49,497,141	$67,124,554
Average	n/a	n/a	$188,057	$194,500	$401,536	$494,971	$639,281
Median	n/a	n/a	$156,754	$172,805	$355,922	$426,722	$571,790
Number of Libraries Reporting			63	78	102	100	105
c. Electronic Resources (total a+b)							
Total	$14,147,625	$20,132,553	$33,878,304	$39,810,793	$50,512,984	$60,686,244	$77,972,773
Average	$172,532	$236,854	$349,261	$394,166	$485,702	$594,963	$742,598
Median	$148,158	$212,936	$278,404	$332,128	$420,741	$495,011	$645,495
Number of Libraries Reporting	82	85	97	101	104	102	105
d. E-Resource $ as Percent of Lib. Materials Exp.							
Average	3.60%	4.75%	6.39%	6.83%	7.76%	8.85%	10.56%
Median		4.45%	5.33%	6.42%	7.51%	8.29%	10.18%
Number of Libraries Reporting	82	85	97	101	104	102	105
e. External/Consortial Expenditures							
Total	n/a	n/a	n/a	n/a	$3,827,348	$4,695,737	$7,442,962
Average	n/a	n/a	n/a	n/a	$136,691	$142,295	$201,161
Median	n/a	n/a	n/a	n/a	$120,096	$128,795	$145,280
Number of Libraries Reporting					28	33	37

Source: ARL Supplementary Statistics

RAISING AWARENESS OF FACULTY ABOUT PRESERVATION ISSUES

by Paul Conway, Head, Preservation Department, Yale University Library

Scholars have an important role to play in advancing the preservation cause locally and nationally. So asserts the recent report jointly issued by the Association of Research Libraries, the Modern Language Association, and the American Historical Association. *Preserving Research Collections: A Collaboration between Librarians and Scholars* argues that mobilizing scholarly communities is essential to the successful preservation of both deteriorating print collections and new digital resources: "It is important that scholars understand not only the causes and consequences of the deterioration of different information media, but also the choices involved in protecting and preserving research collections at risk. Scholars should participate in the debate about priorities for action."[1] The principal challenge for the academic administrator who wishes to act on the report's recommendation is constructing a strategy that engages local faculty in advocating the preservation enterprise without unduly burdening daily operations with narrowly drawn mandates.

Last year, Yale University Library tapped to good ends the deep interest and natural curiosity of the faculty who served on the Library's Advisory Committee on Library Policy (ACLP). The ACLP meets monthly through the academic year. A senior faculty member chairs the group for a three-year term. The group typically concerns itself with the state of the library's budget and with policy issues that have broad impact on campus. Committee concerns can run the gamut from the narrowly focused (hours of operation, circulation loan periods, the disposition of the card catalog) to the truly broad (collection funding levels, intellectual property rights, technology trends). During the 1998–99 academic year, the ACLP chose to focus special attention on the Library's preservation program. The experience of preparing for a sequence of briefings and managing the ensuing discussion is a simple case study of the opportunities and risks that accompany scholarly participation in a mission-critical endeavor.

The National Context

The support of the scholarly community has been essential to the success of the modern preservation movement. In the 1980s, leaders in the preservation field recognized that the resources necessary to address the needs of even a small portion of the nation's crumbling research collections could not be marshaled unless scholars raised their voices. The Commission on Preservation and Access and others devoted significant effort, therefore, to raising the awareness of the academic community of the scope of the brittle books problem and mobilizing support for federal government involvement in funding collection-based preservation microfilming programs. The message was narrowly construed, clear, and consistent: "The nation's cultural memory is threatened unless we choose the most proven preservation strategy—microfilm."

The effort paid off, but at a price. With awareness of the problem and the single strategy came concerns from scholars that large-scale microfilming projects were destroying local collections in order to save them. This concern was most pointedly expressed through the Modern Language Association's Ad Hoc Committee on the Future of the Print Record. The group, chaired by G. Thomas Tanselle, issued a statement in 1995 that galvanized the attention of scholars and librarians alike on the need to think more broadly about preservation options. A draft of the statement essentially called for the preservation of everything. The final published version acknowledged that preservation decision making was necessary but argued forcefully for the value of the artifact. "The loss of any copy of any edition—from the earliest incunables to the latest paperback reprints (regardless of whether its text is considered interesting or consequential at the present time)—diminishes the body of evidence on which historical understanding depends."[2]

The MLA statement compelled the preservation community to redefine the way it engaged scholars. Moving beyond the focus on building awareness of the scope of the problem, the Council on Library and Information Resources (CLIR) and the Association of Research Libraries (ARL) began to emphasize the rich array of available preservation options and the complexities of choosing among these options. The groundwork for this shift had been laid during the previous five years through the work of the Commission on Preservation and Access's scholarly advisory committees focused on six disciplines. In *Difficult Choices*, Gerald George summed up the work of the committees by answering the question "What should scholarly involvement mean?"[3] He pointed to the tremendous limitations on local collaboration between scholars and librarians, especially regarding the relentless item-by-item decision making that is at the heart of an operational preservation program. George recommended that scholarly involvement largely take place on a higher plane through the involvement of scholarly associations and national efforts to define the preservation choices.

CLIR formed a Task Force on the Artifact in Library Collections a year ago to focus on what factors make it useful or necessary for a work to be retained in its original form and what preservation options are advisable to ensure the integrity of the item.[4] The Task Force is now reviewing a first draft of its report and plans to circulate the report among key groups within the library and scholarly communities this winter before issuing a final report by summer 2001. The draft report sets the preservation of and access to resources in their original format in the larger context of the dynamic information landscape in higher education. It explains to its target audience—the academic community—that growth in the creation and dissemination of information of potential value to scholars has forever altered the ways in which libraries can collect "comprehensively." Scholars are increasingly demanding access to original resources while expecting increased digital access "anytime, anywhere." This situation is placing an intolerable burden on library budgets across the country, the report will say. The Task Force is deeply engaged in the intellectual challenges of defining what an artifact is and how one is to determine its value—and then goes straight to the question of who, when, where, and how we pay for the preservation and access that we find desirable. The Task Force will assert that the financial and human resources to preserve are limited, will continue to be limited, and tough choices must be made.

> *The important shift in emphasis at the national level from problem scope to preservation options and costs...has significant implications for how library administrators approach faculty in their own institutions....Yet fundamental questions remain at the institutional level regarding the role of scholars in supporting preservation program development.*

ARL, in the meantime, had joined with the MLA and AHA to respond directly to the recommendations outlined in the "Statement on the Significance of Primary Records." The recent ARL report, *Preserving Research Collections*, moves well beyond describing the scope of the preservation challenge to define the role of scholars in shaping preservation selection decisions. As with the work of the CLIR task force, the ARL report places traditional preservation decision making in the context of new pressures to create and maintain digital resources. The ARL report zeros in on budget matters and articulates the case for sustaining a commitment to traditional preservation programs.

The important shift in emphasis at the national level from problem scope to preservation options and costs, represented by the work emerging from CLIR and ARL, has significant implications for how library administrators approach faculty in their own institutions. After 20 years of focused effort by preservation administrators, the need for preservation, the value of preservation programs, the wide array of preservation options, and the costs associated with each option are now fairly well documented.[5] Yet fundamental questions remain at the institutional level regarding the role of scholars in supporting preservation program development. Who should make preservation decisions at the level of the item and upon what basis should those decisions be made? What level of financial commitment should be made at the local level to build and maintain preservation programs, however broadly construed?

The Yale Experience

Within this environment of shifting emphasis and new budgetary pressures, Yale University Library engaged its faculty advisors on preservation priorities. The ACLP devoted substantial portions of four monthly meetings in 1999 to preservation issues. The first session, in January, reviewed the history and development of the nearly 30-year old program. The emphasis of this review was on how the growth of the program resulted from new understanding about Yale's preservation needs and, at the same time, reflected overall trends in the preservation activities of major research libraries. Faculty advisors heard two important messages in this briefing. First, preservation treatment and reformatting processes must be designed to maximize efficiency and stretch limited resources as far as possible. Second, preservation does not and cannot buy the salvation of books. It buys a longer usable shelf life. The most cost-effective treatments buy the most time at the least cost.

During this first session, concerns of faculty tended toward the global, such as the scale of the problem at Yale, the continuing challenges of acidic paper in publications from non-Western countries, and the role of circulation and use policies in extending the useful life of collections. It is important to note here that regardless of how many times these global issues have been reviewed and restated by preservation professionals, faculty need regular reminders of the larger context within which preservation decision making takes place.

The February session focused on mass deacidification. During the previous year, Yale had undertaken a series of benchmark tests of competing treatment processes marketed by Preservation Technologies, Inc., in Pennsylvania and Zentrum fur Buch-erhaltung in Germany. Our intention with the briefing was to direct the attention of the faculty to the selection strategy developed in the Preservation Department to identify and queue collections for treatment. Instead, faculty advisors focused on the opportunities for consortial action to avoid duplicative treatment (along the lines of early Research Libraries Group microfilming projects). The most pointed questions from the group concerned funding. Faculty advisors were interested in the advantages and liabilities of allocating a portion of the Library's collection budget to support mass deacidification treatment.

Unlike the first two ACLP meetings, the meeting in March followed a topical agenda set by the faculty. The group focused on three significant preservation policy issues that together symbolize the natural tension between preservation and access. The first issue concerned the potential damage done to fragile books and serials through self-service photocopying. The group explored the effectiveness of reader preservation-education programs and how to reach the consciousness of students who may be reluctant to admit that they may not know how to fully utilize one of the world's largest research libraries. The advisory group also discussed the need for limits on circulation and out-of-building use in the interests of preservation. Finally, the faculty considered access priorities for materials that exist in the library system in both hard-copy and microfilm formats. In each of these areas the advisory group conducted a lively and productive discussion without proffering specific recommendations.

During the final discussion in April, the ACLP tackled one of the most contentious preservation issues: the Library's policy about discarding books after preservation microfilming. Library administrators used the occasion of this discussion to dispel the notion that preservation decision making might result in the withdrawal of books that could somehow remain in use. For at least the last decade, Yale's preservation program has weighted the care of the artifact over reformatting initiatives. Additionally, the preservation program has sought to leverage the existence of a new off-campus shelving facility to marry collection management needs with preservation. Faculty advisors were reminded that the Library does not "weed" books for weeding's sake and that the default policy is to retain books in the collection after filming, unless they simply cannot be used.

According to University Librarian Scott Bennett, a year of ACLP's preservation assessment reinforced the responsibilities of the Library to manage the details of preservation: "The outcome of this much better understanding on the part of the committee was a clear resolve to leave the decision making in the clearly competent hands of the preservation processionals. I don't think this is where some committee members started, but they all ended wanting to understand—not to decide."

Additionally, the ACLP briefings opened a dialog with senior faculty that continues to broaden to encompass conversations with individual faculty and academic departments. Support for preservation is built one faculty member at a time through the cumulative effect of a strong message that is jargon-free, a rich mixture of theory and practice, and crystal clear about the costs and benefits of preservation action. And yet, librarians should not be surprised when discussion on core preservation concerns turns to issues that do not obviously fall under the umbrella of preservation, such as photocopy policy, building use, or the future of the card catalog.

The question of what to preserve may turn on the question of what to lose. This is especially true in the arena of digital libraries, where preservation methodologies are not yet well developed and where the proliferation of product far outstrips our capacity to manage. As we identify new resources and allocate existing resources to support digital initiatives, a solid preservation program is an essential security blanket that protects and treats the often-unique resources that are the raw materials of our digital products. In-depth and far reaching conversations with faculty about preservation is an essential mechanism for constructing the bridge that must be built between national agendas and local preservation imperatives.

[1] Jutta Reed-Scott, *Preserving Research Collections: A Collaboration between Librarians and Scholars* (Washington, New York: Association of Research Libraries, Modern Language Association, and American Historical Association, on behalf of the Task Force on the Preservation of the Artifact, 1999), <http://www.arl.org/preserv/prc.html>.

[2] Modern Language Association of America, "Statement on the Significance of Primary Records," in *Profession 95* (New York: Modern Language Association, 1995), 27–28, <http://palimpsest.stanford.edu/byorg/mla/mlaprim.html>.

[3] Gerald George, *Difficult Choices: How Can Scholars Help Save Endangered Research Resources?* (Washington: Commission on Preservation and Access, 1995), <http://www.clir.org/pubs/abstract/pub58.html>.

[4] Abby Smith, "CLIR Forms Task Force on the Artifact," *CLIR Issues* 11 (September/October 1999), <http://www.clir.org/pubs/issues/issues11.html>.

[5] Paul Conway, "Preserving the Nineteenth Century: Challenges and Possibilities," in *Getting Ready for the 19th Century: Strategies and Solutions for Rare Books and Special Collections Librarians*, edited by William E. Brown, Jr. and Laura Stalker, 51–71 (Chicago: Association of College and Research Libraries, 2000).

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OFFICE OF SCHOLARLY COMMUNICATION

Mary M. Case, Director, ARL Office of Scholarly Communication

NEW DIRECTORY TRACKS SCHOLARLY E-JOURNALS & DISCUSSION LISTS

by Dru Mogge, Program Officer for Internet Services

Following the tradition begun in 1991 when the first ARL *Directory of Electronic Journals, Newsletters, and Academic Discussion Lists* was published, ARL has again produced an extensive catalog of serials available online. The latest publication, the first edition of the ARL *Directory of Scholarly Electronic Journals and Academic Discussion Lists*, focuses on peer-reviewed e-journals and includes Diane Kovacs's directory of academic and professional e-conferences. Together these two resources, available in print and online, serve as an essential reference tool for research librarians.

The growth of electronic publishing over the last 10 years is phenomenal. In 1997 when the last *Directory* was published, it contained over 3,400 titles, including 1,049 that were identified as peer-reviewed. The current print *Directory* contains over 3,900 titles, all of which are peer-reviewed. The online version contains more than 900 additional peer-reviewed e-journals. The number of fee-based titles has risen dramatically, confirming the notion that traditional academic publishers, who were at first leery of the new medium, have now joined the ranks of e-publishers.

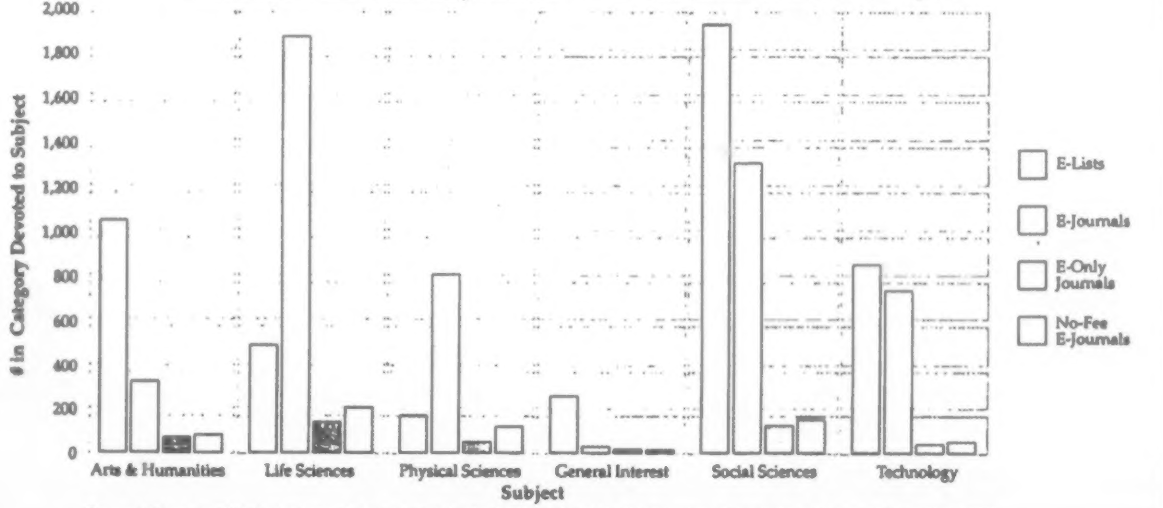
The academic lists section of the *Directory* has also seen significant growth. In 1997, the Kovacs team identified just over 3,800 lists; the current edition contains over 4,600 entries. These lists, or e-conferences, are made up of discussion lists, newsgroups, MUDs, MOOs, mailing lists, and interactive web chat groups. The Kovacs team screens and evaluates the lists based on topics of interest to scholars and professionals for use in their scholarly, pedagogical, and professional activities.

All entries in the *Directory* were analyzed for subject content and keywords were assigned based on a thesaurus created especially for the *Directory* project. The accompanying chart shows the distribution of subjects across e-journals and lists as well as for e-journals that are without a fee and those that are available only in electronic form.

In addition to its periodically updated listings, an online version of the *Directory* offers users the ability to browse through individual entries or search for specific items. Searching the online version has been enhanced since the last edition was released and includes the ability to search both the e-journals and lists section by subject at the same time.

The *Directory* was edited by Dru Mogge and Peter Budka of ARL. The e-journal section is compiled and maintained by ARL. The e-conference entries are contributed by Diane Kovacs of Kovacs Consulting. A freely accessible list of e-conference titles which Diane Kovacs and her team compiled is available at <http://www.n2h2.com/kovacs/>. The *Directory* is available for purchase as either a print and electronic package (members, $65; nonmembers, $95) or electronic access only (members, $50; nonmembers, $70). The online version is also available as a one-time download. Consult either the website <http://www.arl.org/scomm/edir/> or email <pubs@arl.org> for order information.

SCHOLARLY ELECTRONIC JOURNALS AND DISCUSSION LISTS BY SUBJECT



Source: *Directory of Scholarly Electronic Journals and Academic Discussion Lists* (Washington: Association of Research Libraries, 2000).

Lee Anne George, Program Planning Officer

ARL MEMBERSHIP CONVENES 17–18 OCTOBER

One hundred and four ARL member institutions were represented at the 137th ARL Membership Meeting held 17–18 October in Washington, D.C. The meeting was structured to allow member representatives time to discuss topics of strategic and operational concern to research libraries. Marianne Gaunt (Rutgers University), Chair of the Scholarly Communication Committee, led a discussion on the Tempe Principles and the Create Change campaign. Nancy Gwinn (Smithsonian Institution), Chair of the Preservation Committee, reported on the preliminary results of the preservation and digitizing survey conducted this summer and led a discussion on issues related to the preservation of the artifact and digital materials. This session was followed by three concurrent sessions of discussions on a wide variety of topics that had been suggested by member representatives. The Federal Relations Luncheon program included a briefing by Peter Jaszi, Washington College of Law, American University, on recent copyright-related court cases.

DIRECTORS HONORED FOR 20+ YEARS OF RESEARCH LIBRARY LEADERSHIP

Directors of ARL libraries for 20+ years were recognized by their colleagues at a ceremony during the October 2000 ARL Membership Meeting. Among the 16 directors honored were (standing, from left to right) Paul Willis (University of Kentucky), Sterling Albrecht (Brigham Young University), Marilyn Sharrow (University of California, Davis), Sul Lee (University of Oklahoma), Susan Martin (Georgetown University), David Bishop (Northwestern University), Charles Osburn (University of Alabama), Susan Brynteson (University of Delaware), Elaine Sloan (Columbia University), Graham Hill (McMaster University), Martin Runkle (University of Chicago), and George Shipman (University of Oregon). Honorees not pictured are: Harold Billings (University of Texas), Charles Miller (Florida State University), Margaret Otto (Dartmouth College), and Murray Shepherd (University of Waterloo). Seated in the first row (from left to right) are Kenneth Frazier (University of Wisconsin), ARL Past President; Shirley Baker (Washington University, St. Louis), ARL President; Paula Kaufman (University of Illinois, Urbana-Champaign), ARL President-Elect; and Duane Webster, ARL Executive Director.

Photo by Joe Swab, National Agricultural Library.

Business Meeting

At the ARL Business Meeting, membership voted to invite Boston College Libraries to join as a member of ARL (see separate article below). Membership also voted to accept the dues recommendation for 2001 and elected three new representatives to the ARL Board of Directors: Nancy Baker (University of Iowa), Sarah Michalak (University of Utah), and Ann Wolpert (Massachusetts Institute of Technology). Each will serve a three-year term on the Board, October 2000 to October 2003.

ARL President Ken Frazier (University of Wisconsin) acknowledged the contributions of Board members whose terms expired this October—Scott Bennett (Yale University), Betty Bengtson (University of Washington), and Carla Stoffle (University of Arizona)—and presented each a certificate of appreciation. He announced that Paula Kaufman (University of Illinois, Urbana-Champaign) had been elected Vice President/President Elect of ARL by the ARL Board of Directors. Ms. Kaufman serves as Vice President for a year before becoming President in October 2001. At the conclusion of the Business Meeting, Mr. Frazier handed the gavel to Shirley K. Baker (Washington University, St. Louis), who began her term as ARL President.

Honors at NAL

The National Agricultural Library hosted the closing reception at which 16 directors with 20 or more years of service to ARL libraries were recognized. Kendon Stubbs, Associate University Librarian, University of Virginia, was also recognized *in absentia* for his years of service to the ARL Statistics and Measurement program. The ARL Membership Meeting was followed on Friday and Saturday by the Measuring Service Quality symposium.

Summaries of the concurrent discussion sessions and of the ARL Business Meeting will be posted on the ARL website.

BOSTON COLLEGE JOINS ARL

At its 2000 Fall Membership Meeting, the membership of ARL voted to invite Boston College Libraries to join as the 112th academic member. Located in Chestnut Hill, Massachusetts, the University is classified in the 2000 Carnegie Classification System as Doctoral/Research Universities—Extensive. Jerome Yavarkovsky is the University Librarian. Boston College, founded in 1863, is a private, coeducational university and is one of the oldest Jesuit, Catholic universities in the United States. The Libraries serve as a resource in support of the research and instruction conducted by the approximately 650 full-time faculty and close to 14,000 students. The Libraries also include the distinctive Burns Library of Rare Books and Special Collections, which houses the Irish Collection, literary collections, and the William Butler Yeats manuscripts. For more information on Boston College you may review a special portfolio prepared by College staff in preparation for membership consideration: <http://www.bc.edu/bc_org/avp/ulib/port/protof/portfolio.html>.

TRANSITIONS

Dartmouth: Richard E. Lucier was named Librarian of the College at Dartmouth effective February 2001. He is currently Associate Vice Provost for Scholarly Information at the University of California (UC), Founding University Librarian of the California Digital Library, and Executive Director of UC Systemwide Planning for Libraries and Scholarly Information.

Georgetown: Susan K. Martin has announced her intention to leave Georgetown University Library as Director, effective 31 August 2001.

Washington: Betsy Wilson was appointed Director of the University of Washington (UW) Libraries, subject to approval by the Board of Regents. She is currently the Associate Director of Libraries for Research and Instructional Services at the UW. This appointment will become effective 1 January 2001.

HONORS

SUNY at Albany: The New Library, which was designed by the firms Lockwood Greene and Ray Gomez Associates and opened in October 1999, recently won design awards from the Society of American Registered Architects and the New York Construction News.

IPI FIELD TESTS PRESERVATION MANAGEMENT TECHNOLOGY

Earlier this year, the Image Permanence Institute (IPI) asked libraries, archives, and museums in the U.S. to apply to participate in a field trial of newly developed preservation management technology. Approximately 150 different cultural organizations—including 38 ARL member libraries—are participating in the field trial, which began in November 2000 and will go on for two years. IPI is providing hardware, software, and training free of charge to the participants under the terms of a grant from the National Endowment for the Humanities (NEH). The purpose of the project is to test and refine a computerized system for gathering and interpreting data on environmental conditions in collection storage and display areas. Participating institutions receive two Preservation Environment Monitors (an advanced datalogger developed with NEH funds specifically for preservation use) and a copy of Climate Notebook, a Windows®-based software application developed by IPI with funds from The Andrew W. Mellon Foundation.

Responsibilities of field trial participants include paying for travel expenses for selected staff to attend a mandatory one-and-one-half-day training session, providing written evaluation of the complete system, a willingness to share (anonymously) summary data on collection storage environments to be used for benchmarking, and a good-faith effort to advance the utility of the new technology. In addition to the hardware, software, and training, IPI will provide participants with a written report of the project results, including the benchmarking data.

The ARL libraries participating in the field trial are:

University of Arizona
University of California, San Diego
Colorado State University
Columbia University
Cornell University
Duke University
Emory University
University of Florida
Georgia Institute of Technology
Harvard University
University of Illinois, Urbana-Champaign
University of Iowa
Johns Hopkins University
University of Kansas
Library of Congress
University of Michigan
Michigan State University
National Agricultural Library
National Library of Medicine
New York Public Library
Northwestern University
Ohio State University
Ohio University
University of Oregon
Smithsonian Institution
University of South Carolina
University of Southern California
Stanford University
Syracuse University
University of Tennessee
University of Texas, Austin
Texas Tech University
Tulane University
University of Utah
Vanderbilt University
University of Washington
University of Wisconsin, Madison
Yale University

For more information on the field trial, see the IPI website at <http://www.rit.edu/ipi/>.

ARL

ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036.
202-296-2296 FAX 202-872-0884
<http://www.arl.org/newsltr/>

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Executive Director: Duane E. Webster
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Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year.

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ARL CALENDAR 2001

January 11	Licensing Workshop for Publishers *Washington, DC*
February 1–2	Advanced Licensing Workshop *Long Beach, CA*
February 6–9	Library Management Skills Institute II: The Management Process *Las Vegas, NV*
February 8–9	**ARL Board Meeting** *Washington, DC*
February 16–18	ARL/OCLC Strategic Issues Forum *Tempe, AZ*
March 29–30	Licensing Workshop *Atlanta, GA*
April 9–10	CNI Task Force Spring Meeting *Washington, DC*
April 25–27	Assistant/Associate University Librarian/Director Institute *Phoenix, AZ*
May 14–16	Facilitation Skills Institute *Kansas City, MO*
May 22–25	**ARL Board and Membership Meeting** *Toronto, Ontario*
June 6–8	Managing Group Process: Advanced Facilitation Lab *Chicago, IL*
June 27–29	Building on Strength: Developing an ARL Agenda for Special Collections *Brown University, Providence, RI*
July 23–24	**ARL Board Meeting** *Washington, DC*
August 12–16	Fourth Northumbria International Conference on Performance Measurement in Libraries & Information Services *Pittsburgh, PA*
August 18–24	International Federation of Library Associations Annual Conference *Boston, MA*
October 10–12	Library Management Skills Institute I: The Manager *San Antonio, TX*
October 16–19	**ARL Board and Membership Meeting** *Washington, DC*
November 7–9	Project Management Institute: Getting Things Done or Getting the Outcomes You Want *Raleigh-Durham, NC*
November 12–13	Creating a Culture of Assessment Workshop *Washington, DC*